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To explain these things properly requires a sense of the conditions which have produced them, an appreciation of the historical depth of the culture. In some areas, one perhaps might neglect history, relying on the interesting present to furnish the correct details. Such an approach would be fatal in any study of this part of the world, and neglect of history is responsible for the fatuous doctrine of the "unchanging East." While this is an investigation of contemporary life, indeed that is the purpose of the program under which the study was made, I have felt impelled to point out historical events and conditions which have brought the culture to its present state, not with any assurance that this has been adequately done, but at least to make clear that these historical problems exist, and that the contemporary culture must be seen as the end product of its historical antecedents, including the hints that can be collected of the modifications of the environment by human agency. The present geography of the island is to be seen, for example, not as something given and unchanging. The forested north and the deforested south are in all probability the direct result of the history of human settlement. 121

An approach of this type, I felt, could best be served by comparative study. Concentration on one village would have resulted in a deeper understanding of the way of life in that village and closer friendships with the villagers, and these advantages cannot be sensibly minimized. The selection of two or three villages might offset this disadvantage and offer some compensations of its own. One of these was comparison, even though it cannot be assumed that merely because three villages instead of one have been studied that a more valid interpretation of the whole culture has been obtained. Even in this small island, each "typical" village seems to grow less and less so as one learns more of the details. But at least the three situations can provide insight into three basically similar but different ways of living. If this is true on an island barely sixty miles long and eighteen miles wide at its widest point, how great this diversity must be in China, Japan, and Korea!

Upon arriving in Okinawa, I spent the first few days talking with officials who had, in the course of their duties, travelled widely throughout the island. From them I was able to obtain an idea of the different types of villages, those like Oku in the north that were exceptional, those that had come under direct American influence due to proximity to civil and military installations, and those that departed from the pattern of agricultural life. With these guides in mind, I determined to select one village whose economy was based on agriculture and this meant primarily the growing of rice, sugar cane, sweet potatoes, and soybeans. The number of villages that could meet this broad criterion was large, and it did not seem advisable in view of the shortness of the assignment to spend too much time in selecting a village, because the criteria of what was typical might be just as obscure at the conclusion as at the beginning. 121 184 [241]

Accordingly, I spent a day or so travelling in the general area south of the Chinen peninsula in the townships of Tamagusuku and Oushichan. These were close to Naha, and yet distant from the main centers of American influence. I was concerned here to select a village which would reflect as 114 121 184

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4

The Disappointing Soils

Okinawa is small and has a large population. Agriculture has been and will continue to be the main source of livelihood for the people. For this reason, a consideration of the nature of its soils has practical interest. The soils of Okinawa fortunately have recently been surveyed, classified, mapped, and computations made of the approximate areas of each soil type.[7]

	Estimated Acreage on Okinawa Island
1. The alluvial soils of the coastal flats and flood plains (Akamaru and Aha soils). About 80% of these are the gray clays given over to rice fields, and 20% in the brown and well drained Aha soils. These soils have no distinct profile, average more than six feet in depth, are slightly to medium acid. Deep and fertile, they are composed of loam, clay loam, and sandy loams. They are scattered over the island, frequently at the heads of bays or inlets where the short rivers come to the sea. The most conspicuous occurrences are in the Northern region, including the Motobu peninsula. They are much less frequent in the central district, and scarce in the southern district, with the most conspicuous spots along the Minatogawa river and the headwaters of a small stream south of Minatogawa. These soils are level or almost level (surface gradient 0-1.3%). The water table is seldom more than two feet below the surface.	10,900

[TEXT CONTINUES ON TOP OF P. 19 -- ANALYSIS]

7 The following materials have been used: (1) Soils of Okinawa, 11 sheets, controlled photomaps, with soil map overprint, prepared under the direction of the Engineer, Far Eastern Command, by various staff members of the US Geological Survey, Dept. of the Interior, and the Soil Survey of the USDA. (2) Okinawa Soils, a more generalized map, on one sheet (1:1,000,000) prepared by the Military Geology Branch, USGS, for the Intelligence Division, Office of the Engineer, GHQ, FEC, 1951. This is a map of dominant soil types. The analysis here is based on this unclassified map. See also the discussion in Nuttonson, as cited, 37-48. The writer wishes to acknowledge the courtesy and assistance of Mr. Sherman Neuschel, Chief, Military Geology Section, FEC, and Mr. Carl Stensland, Soil Scientist, who participated in the survey of Okinawan soils. In Tokyo on my return, I profited from my discussions with Dr. Stensland, who also furnished me with grid computations for the village areas in which I was interested.

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a suburb of Naha, thence to Shuri. They turned north, passed the ancient fortress of Nakagusuku, went over to the east coast, proceeding to the vicinity of Kanna. In Matsuda, which the exploring party apparently did not reach, there is still a story about Perry's expedition. It concerns a carving on stone placed on the top of a dramatically shaped rock on the seashore. According to local residents, this carving remained in place until it was shot off by an American soldier during the war.

Roughly around Kanna, the party crossed the island to the South China Sea or western side, and reached the village of Un-na (modern Onna), an engraving of which appears in the narrative and also in Bayard Taylor's India, China, and Japan. The return trip was down the coast, and the road led through Nachinato back to Naha. Coastal explorations were extensive. A new chart was an immense improvement over Hall's. Special attention was given to the Unten (Port Melville) and Shah Bay (Miyagishima and the area south of Ogimi).

Bayard Taylor, the famous traveller who had joined the expedition and wrote parts of the narrative, spoke of the interior of Okinawa in 1853 as a "terra incognita," and he was not exaggerating as far as Western knowledge was concerned.[22] This probably applied to the Japanese as well, for their stations were in Naha and an administrator or scholar of the Tokugawa era probably found little in agriculture, plant life, land tenure, and local history and ethnography to interest him.[23]

[24]

Upland agriculture, the hoeing of sweet potatoes, the planting and transplanting of rice, the manufacture of sugar were described much as they can be observed to this day in parts of Okinawa. They noted a sameness and a lack of variety in plant life, the planting of pines along the highways, the fences used as protection against the wild boar. The communal land system was remarked upon, the writers thinking it a "metayer system," that is a form of share-cropping in which the proprietor of the land and the cultivator receive equal, or agreed upon proportions. They described houses built on small stilts, the compounds, and the village granaries. They strolled through villages, poked their heads into huts, and wrote about the utensils in the kitchens. They theorized about the possible origins of the people and their connections with other races, discovered lingams which were interpreted as the ruins of "ancient Hindoo idolatry." They spoke of the glossy upswept hair and the hair pins according to rank.

[137] [421] [342] [302]

The village granaries are gone; so has the land system and the costumes, and the long swept up hair of both sexes. Agricultural techniques and the care of the land have remained.

[198]

[Text Continues Top of P. 38--Analyst]

22 See Bayard Taylor's A visit to India, China, and Japan, in the year 1853. Chapters 30, 33, 36.

23 In the early 17th century the Japanese explored the island, took a census, and reorganized political administration. CA Handbook Ryukyu (Loochoo) Islands, 40.

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Perry's men, the aspect of these villages was one of rare and romantic beauty.[3]

2

Hanashiro

Hanashiro is a small village of the cluster type in Gushichan township (Gushichan-son) in the southeastern part of Okinawa.[4] It is on the present Highway 64 which begins on the Chinen peninsula, travels southwesterly, following the coast at a distance to Mabuni in the southeast, then crossing the island to Nagushiku town, a village south of Itoman.

The village and its surroundings are small in area, the actual town site including various village owned properties, taking up slightly over 22 acres. This is an agricultural village, with the exception of minor activities such as storekeeping and rice milling. As of December 31, 1951, it had a population of 589 (269 male, 320 female), living together in 120 households, an average of 4.9 persons per household.

The village is believed to have been founded about 400 years ago. By Okinawan standards this is not very old. It is off the main historical road which ran from Naha to Shuri to Kochinda, Gushichan, Minatogawa, through Tamagusuku township to the Chinen peninsula, probably the road travelled by Okinawan kings up to the latter part of the seventeenth century when they prayed at the altars on Kudaka Island.[5] There were in this area a series of castles on the tops of hills commanding the road and its approaches, the castles, the rough determinants of various regions formerly under a regional nobility. To the west there was Kochinda castle, Tamagusuku on the east, Gushichan castle near Hanashiro, where a surviving stone fence can still be seen, and the castle site of Itokazu. There is reason for believing, as we mentioned in Chapter 1, that this is in the general area of oldest settlement in the island.

[Text continues on P. 49 --analyst]

3 Hawks, Perry's expedition to Japan, as cited, Vol. I, 163, 164, 179-80, and an illustration of a "cung-qua" on p. 180. On the older village with granaries and storehouses, see Green's remarks in Hawks, Perry's expedition, as cited, Vol. II, 34, 36, and illustration in Vol. I, 178.

4 The village is also known as Hanagusuku: the meaning is the same, as shiro is the Japanese, gusuku the Okinawan word for castle. Many Okinawan place names have the suffix, —gusuku.

5 Spencer, The Noro, or priestesses of Loo Choo, as cited, 107.

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Since the war, the old narrow one lane roads have been broadened, permitting heavier auto traffic. Land ownership has been undisturbed, for it is not in an area in which the military has required land. Since the war, the villagers have tried to return to their former way of life, but this has been done with poorer houses and fewer possessions.

3

Minatogawa

Minatogawa, the second village studied, formerly was a shoe string type of settlement. Houses, shops, drinking places were along the seawall road. This pattern is now altered as a result of the war. Scattered areas have been relocated and houses built on lands formerly used for sweet potatoes. It is now an indeterminate type of village, retaining some indications of its old settlement pattern along the main road, with additions of clusters of houses in the newly settled areas.

Like Hanashiro, this village is in Gushichan township, and located on Highway 64. It is directly on the main historical road, previously mentioned, which led from Naha to the Chinen peninsula. The road, along which its houses are built, parallels for a distance the estuary of the small Minatogawa river. This narrow estuary, called Usaregawa, which connects the river mouth with the Pacific Ocean, and the small river itself (Yuhigawa) is a boundary between Gushichan and Tamagusuku townships. On either side there are steep cliffs, the sites of the best known stone quarries of Okinawa.

The settlement and the adjoining lands have an area of about 256 acres. It is a mixed economy village with three distinct occupational groups: fishermen, stonecutters, and farmers. There is a second village whose borders blend with those of Minatogawa. These two villages are now known officially as Minatogawa-ikku and Minatogawa-niku. The two terms can be awkwardly translated as Minatogawa first ward, and Minatogawa second ward. But popularly they retain their older names: Minatogawa for the fishing village, and Nagamo for the agricultural second ward. These two separate but adjoining villages were until 1925 a single village.

The division was the result of distinct differences in outlook and occupation between the two sections. Minatogawa is a fishing village and has strong ties with Itoman, a town on the East China Sea shore about 4 1/2 miles away. Nagamo is an agricultural community originally settled from Naha and Shuri. Stone-cutting operations spread over both areas. While the fishing village of Minatogawa was given the emphasis in this study, it will be necessary occasionally to include Nagamo in the discussion.[8]

8. The writer did not realize until he lived here that two villages were involved, thinking that the two wards referred to a single administrative unit. By this time the work on Hanashiro had been well started, and time did not permit the intensive study of Nagamo.

standing. At one time, the Hinatogawa beaches were seriously considered for the initial landings in Okinawa, and later as a possible second landing. After the campaign for the south had begun, Hinatogawa became a forward loading point.[10] The present village has been completely rebuilt, and the newer buildings, with few exceptions, are frail and undistinguished. The war shows its effects, too, on the southern part of the village where there is a barren acreage, formerly the site of an army camp, its top soil so shallow that the bulldozers in levelling it soon reached the rock beneath.

Nearby Nagamo is a village of a different type. It is divided into two distinct quarters, also a result of the war. The old part formerly was to the north in the main stonecutting area, but following the destruction, a new settlement was started in the farm land a few hundred yards south. Cultivation is marginal on the shallow soil of the sloping valley before it descends into the flat coastal area in which the fishing village is located.

Hinatogawa, which means River Port, is a distinctive village reminiscent of the famous fishing town of Itoman, though without its size, beauty, or color.

4

Matsuda

Matsuda is a here-and-there type of village. The village area including the community owned forest is over a square mile. The countryside is dotted with several small sub-settlements. Within each sub-settlement, the houses also are scattered about and separated from one another by large trees, thick growths of shrubbery, grasses, stone fences, and cultivated fields.

The village is located in Ginoza township (Ginoza-son) on the northeast side of the island. This township is in the northern district (Kunigami, or Yambaru). The village is on Highway 13, which winds along the northeast coast through Ishikawa, Kin, Kanna, and Ginoza villages.

Though near the sea, a typical site of a northern Okinawan village, it is a settlement engaged in agriculture and forestry. Its name suggests its nature. Matsuda is a compound of the characters for pine tree, matsu, and rice field, ta, da. Though there is some fishing in the sub-settlements along the Pacific shore, it is casual and a part time occupation for farmers on the coast. The families exclusively

[Text Continues TOP of P. 55--Analyst]

10 The statistics on village destruction are taken from accounts of the villagers. They are estimates. For operations in this area, see Okinawa, the last battle, as cited, 68, 74, 426-27, 436, 439.

226 463 engaged in fishing are permanent or transient families originally from Itoman, a place name which comes up whenever fishing is mentioned anywhere in Okinawa. Agriculture and the care and utilization of the community forest make up the significant economic activities of the village.

162 Matsuda had a population of 1370 individuals (604 male, 766 female) as of November 30, 1951. There were, at this time, 243 households, an average of 5.6 persons per household. The village is said by local residents and antiquarians to be about 600 years old. If the age is 361 correct, it must be one of the older settlements in northern Okinawa. Before the war, this village was known as Kochiya.

173 Matsuda also has its lore regarding shipwrecks and foreigners. There are old men who believe Perry's party came to the village and that they left carvings on the top of a picturesque rock in the Burushii district along the coast, a not unbelievable story since the explorers certainly were not far from here.

Near the seashore, but in a very remote area, there is a natural bridge, concealed by large trees. Roots of the banyan grow through the [137] thirty or forty foot drop from the top of the bridge until they find root in the soil below. On a ledge under this bridge, there are two [764] old and open boxes which were used to collect the skulls and bones of unknown persons. Locally it is believed that they are the remains of shipwrecked sailors, possibly Hollanders. There are still 25 or 30 skulls there, and many of the bones are scattered on the ground. The place is seldom visited.

361 133 The village rests on low rolling hills. The combination of the hills, the depressions, the caves and the sinks give the topography an uneven almost rugged character. There are few flat places and these are seldom wide. They are the narrow meadows or valleys between the hills. The hilly nature of the surroundings determines to a large extent the 241 311 manner of cultivation, and historically probably has had much to do with the shapes of the individual parcels themselves. One does not see in this area the plains or small valleys with rice cultivation that is observed in Haneji township near Nago or around the island of U in Tamagusuku township, or even in the Hanashiro area of Gushichan township. In these communities, the normal pattern of cultivation is that the rice is on the lowlands, with the slopes and upland areas devoted to sugar cane, the sweet potato, or other crops, or left to native grasses. Here in the hundreds of small hills, all of these may be observed in close proximity, hard work and minute tillage comprising with the topography.

361 311 The village is subdivided into several distinct areas: (1) the main part of the village where most of the houses, the village office, the small stores, the rice mill, the sawmill, the power plant, and the barbershop are located, (2) a reclaimed area known locally as the kaikon, newly settled and with a different type of land use due to the poorness of the land and to the fact that it is a deforested area, (3) a district near the sea coast and along the sea with scattered settlements, isolated houses, and some cultivation, and (4) the forest lands, which in the

In this illustration, the first son receives slightly over 60% of the land, ignoring type and grade within type. There was general agreement in all villages that the grade of land within each classification (grades 1 to 4 in dry crop land, for example) had little significance in inheritance matters. The grade is more important for tax purposes.

The example also illustrates two other principles: the natural desire to keep contiguous or close in land within the main family, using inconvenient or far off land where possible for house sites for branch families, or for arable land for second and other sons. In this illustration, the shares of the second and of the third sons could be equalized by subdividing plot #6, although its small area would not make it worth while, as 75 tsubo is a very low average size for dry crop land.

Another practice, noted in Hanashiro and in Matsuda, is that the first son receives everything on the retirement of the father. This may be contrasted with a situation in which the father divides the property before younger sons marry and establish branch families. In such cases, the father might take the income from part of the property. But the more general practice is for the father to give all to the first son. Fathers may also make a will. When the first son receives all, it is the custom for him to hold property which the younger sons will need in establishing their branch families. It is in cases where the first son is given full disposition of the property that quarrels are most likely to occur, for much depends on the generosity and sense of fairness of the elder brother.[3]

In Hanashiro and Minatogawa, it is important that younger brothers receive genya land. Genya is often translated as wild land. In Japan the term is usually used to describe treeless, waste, hilly, rocky, or rolling land unsuitable for cultivation. In Okinawa, the genya land may be in the center of a rice field; it may be a rocky mound with cultivation around it. It may be land in the mountains. It is almost invariably in grass (miscanthus) with an occasional cycad or scrub pine. It is not owned in large tracts. In Hanashiro, the largest single parcel is 4564 tsubo (3.77 acres), in Minatogawa 1333 (tsubo) (1.9 acres), and in Matsuda 6398 tsubo (5.28 acres), but these are far above the average. In Hanashiro it is important because grass is constantly needed for thatched roofs and other uses. The importance of genya and its grass was well illustrated in Minatogawa after the typhoon, Ruth, of October 13-14, 1951. These villagers own little land and many have no genya. They were obliged to buy the grass to replace the roofs of many of the frailer houses which had been partially or completely destroyed by the typhoon. Genya is also used for family tombs. In Hanashiro, the genya

[Text continues TOP of P. 133--Analyst]

3 The problem can be appreciated by analyzing the acreage areas of each classification of land and the grades within it, bearing in mind that the average farmer has hatake, genya, and often rice paddies. These statistics will be given in the following chapter.

place. Then, as now, paddy and dry crop land might lie together, depending upon local factors. In the periodic redistribution, each family received shares of each in non-contiguous fragmented parcels. In the nature of things, they received small shares of the excellent, moderate shares of the good, and large holdings in poor land.

The old classification of lands was simple and did not go beyond three general divisions of good, fair, and poor. Apparently the Japanese after 1879 introduced more refinements and increased the number of classifications to six. Land classification, then as now, was empirical. It was based on observation, local knowledge of present and past yields, and known dangers to the land. It was not based on scientific knowledge of the soils, nor is it today.

Several dangers to land and crops were considered: (1) the danger of the wild boar (inoshishi). These reddish brown wild boars have disappeared from large parts of Okinawa, though occasionally one is seen in the northern forest. The boars destroyed crops by night feeding. Remnants of old fences can still be seen in the area around Matsuda. In Oku, in the extreme north, fences are still used and many can be seen along the hillsides. (2) Dangers from floods and salt water spray. Local flooding is common and often confined to a narrow area. Salt water spray and salt water in the air, especially in typhoon times, are still menaces to crops. The danger from typhoons did not enter directly into the determination of land classification because the area of destruction was so wide that it was not a factor distinguishing one plot from another. (One can however observe areas of differential damage in a village as an aftermath of typhoons).

This old land allotment system is now forgotten except in a few isolated areas where its main features are still apparently preserved. The best known of these is Kudaka Island off the southeastern shore of Okinawa. If the system has disappeared, except for a few isolated survivals, its influence remains to the present: it determined the pattern of land use still in effect today, the pattern of small, discontinuous parcels, and set the precedents for the mechanics of land classification. The basic classifications such as rice land, dry crop land, community forest were Japanese and are of great age. The old land allotment system is also considered to be of great antiquity.[2]

2 It was a matter of considerable disappointment that I was unable to spend two or three weeks on Kudaka to study the land system there. Neither has time permitted an investigation (of great inherent interest) of the historical antecedants of the old Okinawan system. Land classification, such as we will be discussing in the next chapter, is very old in Japanese culture. The old Okinawan system bears some resemblances to the "mouth-share-land" (ku-bu-den) system of old Japan which appears in the Taihō code (702 A.D.). This was a system of distribution of communally owned land, but I have not been able to determine whether the distribution was periodic. See Wigmore, J. H. and Simmons, D. B. Notes on land tenure and local institutions in old Japan. Transactions of the Asiatic Society of Japan, 19 (1891), 77 on land classification, (continued on next page)

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311 243 be lowered. If the rainfall is unusually low, the estimated yields may even be cut in half. Grade differences are also shown by the Oushichan tax table on rice land:

Class	Rate in Yen (per tsubo)
1	37
2	34
3	31
4	28
5	25
6	22
7	19

[651]

311 The grading of dry crop land is not so simple because various crops can be grown and there are difficulties in making equivalences of yields. The grading is more subjective and vague, with gradations based on the judgment of the land committee. It might seem that the grades of dry crop land based on subjective judgment would be difficult to agree upon. This is not the case. Farmers who have lived in the village all their lives, and who as children remembered the experience of their fathers, know their own and their neighbors' land well. Representatives from the village who suggest the grades are chosen by the farmers for their honesty, skill in agriculture, and knowledge of the land.

311 134 133 Depth of the soil, flatness, degree of stoniness and accessibility are the most important criteria. The first three of these follow naturally from conditions widespread in Okinawa. There often is very little topsoil. One can observe cuts in roads or sharp declivities which show soils only an inch or two deep before meeting the consolidated or unconsolidated rock below. The hilly and mountainous nature of the island enforces cultivation on slopes, summits, and rolling hills. Stoniness, whether large boulders or small pebbles or both is common. One of the occupations of the old in Minatogawa and Nagano is to convert stony to arable land by tediously picking up the stones and throwing them into piles for subsequent sale in road building. But often the boulders are so large that cultivation must curve around them. These conditions can be seen to good advantage in Nagano. In Hanashiro, the soils are flatter, less stony, and deeper. Matsuda has wide areas of poor shallow and stony soils.

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[291] First class hatake land, then, is flat, deep, with few or no stones, and suitable either for sugar or the sweet potato and the various common vegetables.

311 With this standard of first class hatake land, the other grades are judged, mostly by inspection and through consultation and agreement by the committee. In the Oushichan township, there are ten such grades of hatake land, the tenth grade being so poor that it is virtually genya land. In dry crop land, probably the most important

single criterion is nearness, providing the land has possibilities. Good land, unless of substantial area, if remote and far from roads, is very time consuming and inconvenient.

Genya land in the Oushichan area has two grades. The criterion here is the presence of grass and small shrubs that can be used for firewood. Grade two genya grows little or nothing either because of the large boulders or because it has too many small stones or unconsolidated rock with little vegetation. If it were not for stones or such topographical factors as steepness or ruggedness, some genya land could be classified as poor grade dry crop land. There are, as in rice land, tax differentials according to grade of hatake and genya land:

Grade	Dry Crop Land Tax in Yen	Wild Land (Genya) Tax in Yen
1	13	2
2	12	1.80
3	11	
4	10	
5	9	
6	8	
7	7	
8	6	
9	5	
10	4	

In Ginoza-son, the land classification system is substantially the same. There are six different grades of land classified according to yield in go per tsubo. (A go is 1/1000 of a koku, a tsubo about 4 square yards).

Grade	Yield	Remarks
1	5	Two annual plantings.
2	4	Two annual plantings.
3	3	Dependant entirely on amount of estimated rainfall.
4	2	
5	1.5	
6	1.0	Mountain paddy, very uncertain, depending on rainfall; occasionally two crops a year are possible.

Dry crop land is judged by criteria similar to those in Oushichan-son. Grade 1 is good soil and convenient to water with good yields as shown by experience. Grades 2 and 3 are convenient to water, but soils are of lesser quality. The classification is also based on experience. Grade 4 is in low places, generally narrow ravines between steep wooded slopes. Grades 5 and 6 have little or no water, are stony, and inconvenient.

In the areas studied, no serious sheet erosion was observed
No doubt this may be a problem in parts of Okinawa, but it is doubtful that this menace will threaten the habitability of the island. Occasionally one can see a freshly hoed field on a slope that is losing its soil during a downpour. But the fact that the hills and mountains are covered with vegetation, are not too steep, and that grasses and shrubs are cut off allowing the stubble with the roots to remain in the soil effectively binds the soil of the hills and at the same time prevents flash floods. With the exception of stony soils, the land of the areas studied had a plant cover. This statement is not inconsistent with the previous remarks regarding deforestation, as the disappearance of the pine, the cycad, and the pandanus has been offset by the spread of kaya (miscanthus) grass. Boundary paths also keep the soil in place. They often roughly follow the slope and are sufficiently crooked and winding and of sufficient depth to prevent washing away of large quantities of soil. While there is no complex irrigation system in these areas, the small ditches which carry the water down the slope are winding and covered on their borders by weeds. Occasionally one can see a farmer shovelling up the soil accumulated in a natural catchment in a bend of one of these ditches and restoring the lost soil to his land.

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In all areas, equally simple devices to protect the soil could be observed. Roadside borders of stone, like the stone of a rock garden, often line the fields adjoining main roads. (One could write a long essay on stones and the part they play in the culture of the people). These stones come from the fields. If fields do not have stone borders, weeds are left to grow. They are cropped, but the roots are left in the soil. In Hanashiro, stone fences on slopes and contour breaks are a common sight. Sometimes these have the appearance of blunt wedges, the end of the wedge going up the ravine. These stones have been painstakingly gathered from nearby areas.

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Terracing is practiced in a crude form in these areas. It really is step or bench cultivation, the plots being above one another in step like order. The function of terracing is, in the case of the dry crop land, to bring more land under cultivation, protecting it from washing away; in the case of the rice fields, it supplies flat land for cultivation at different levels. In the areas studied, terracing did not go all the way up the mountain side, although this practice can be observed in parts of Okinawa.

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Very frequently the ledges of the terraces are covered with a border of weeds or cropped grass which prevent soil runoff down the hill. In the Matsuda area, rice is grown up a narrow mountain valley, or ravine, with trees and shrubbery on the hillsides growing to the very edge of the cultivated plots. In rice terracing, the boundary paths often divide one step from another with openings in the ditches to allow the passage of water to the level below.

plots lies in their being as they are, separating one cultivated area from another, binding the soil, and that they are probably serving their best purposes now, as they have in the past, in furnishing this protection. 311 185

The conservation practices of the Okinawans are at least in part a consequence of the topography. The care of upland areas and rolling hills is imperative. For a great deal of cultivation takes place here. Unlike China, there is not a strong contrast between large scale paddy rice in alluvial soils and the relative neglect of upland areas with deforestation and erosion. In China the meticulous care of the transported soils of the lowlands and the neglect of the uplands is a striking aspect of the attitude toward land. This is true, perhaps to a lesser degree, of Japan.[11] 185 133 311 [171]

In Okinawa there are insufficient delta plains and alluvial soils to provide these contrasts between lowland and upland agriculture. The scarcity of river deltas and alluvial plains means relatively little rice and the use of the rolling hills and the steeper sides of mountains. This necessity has enforced a care of the uplands. It is true that one often sees sweet potatoes or other dry crops growing in rows up and down a hill instead of along contours, and that there seems often to be a lack of appreciation of the consequences of misuse of forest land through clear cutting. But in the main in the use of the uplands for cultivation, the weed borders or rock fences, and other simple devices keep the soils from erosion. The relatively gentle topography has also contributed to this achievement.

4

Fragmentation and Consolidation

Fragmentation of land is common in Okinawa. Ownership of contiguous plots of land is not the general rule. It is a basic fact of land tenure and influences land use and agricultural practice. This fragmentation is a deterrent to the use of machinery, unless cooperatively owned or unless certain individuals specialize in the 423 241

11 See James Thorp, Geography of the soils of China, Nanking 1936, especially Chapters xii-xiv. Gourou, Pierre. The development of upland areas in China, and Trewartha, Glenn T., Utilization of Upland areas in Japan. In: The development of upland areas of the Far East, Vol. I. (Institute of Pacific Relations), New York, 1949. Trewartha describes his surprise in his earlier studies of Japan and his acquaintance "with the fact that the Japanese, like most Orientals, greatly deprecate the value of upland or non-irrigated sites for agricultural land use." (p. 59). This choosiness is not possible for the Okinawans.

423 241 business. Fragmentation means inconvenience, loss of time and effort in the simultaneous cultivation of different fields. The situation is the same for the well-to-do and the poor alike. Large holdings do not mean single pieces of land within a large area, but many small parcels of land, of different classification and grade, scattered like those of a less prosperous farmer. There are offsetting advantages. The greatest of these is that crop destruction through typhoons, salt spray, or flooding may be less catastrophic to the individual owner with small scattered holdings than if a family has a single large plot of land.

423 425 Another effect of fragmentation is that it makes a particular plot of land difficult to sell. If one has a small plot of land, an island in a sea of other ownership, the prospective buyer is in the same position as the seller, unless the buyer owns contiguous land and has the money to make the purchase.

423 The natural question at this point is: what are the possibilities of consolidation of ownership in the interests of more efficient and convenient agriculture? The general answer, I believe, is that fragmentation is almost inevitable, consolidation only possible.

In both of the agricultural villages studied, some voluntary consolidation (kokanbungo) has taken place, but it is not of major proportions. It occurs chiefly for two reasons: (1) clustering one's land near the house site, or having two or more parcels of contiguous land is universally desired. Going to and fro is considered troublesome and onerous. (2) When branch families are established, farmers wish to exchange a distant plot for one in the village for a house site. This is often difficult to do, for such an exchange must be mutually advantageous to bring about a transfer.

423 731 Typhoons are a major obstacle to voluntary consolidation into large holdings. It is perhaps possible to exaggerate this, but personal experience and conversation with villagers who have lost the entire crop of one parcel but have salvaged part of the crop of another convince me of its force. A typhoon damages a whole area but the scattered holdings provide the chance that something might be saved. The total damage is the same in any event regardless of ownership. It is the distribution of loss that varies. If in the future, land consolidation were attempted on a broad scale, either by voluntary individual effort, or cooperatively, crop insurance or some form of sharing losses would seem to be necessary.

423 311 407 The present system of land ownership and of land use and the fragmentation of land would seem to preclude any extensive mechanization of agriculture. Even with consolidated holdings, the nature of the landscape might make the effort uneconomical, though this is a question for technicians in these fields.

1: Glacken E-5 (1951-1952) 1953 AC7 Okinawa AC7

1

Introduction

The basic occupation of the Okinawans has been and continues to be agriculture. The agricultural, not the fishing, wood gathering, or stonecutting community is typical. Fishing, stonecutting and forestry have been the occupations of certain villages or areas, or of certain groups within a village. This and the following chapter describe these ways of living.

Agricultural practices gathered from Hanashiro, Nagamo (to some extent), and Matsuda will be presented in this chapter. Hinatogawa has been omitted because it is primarily a fishing and stonecutting community, and there is nothing distinctive or unusual in its agriculture. This presentation avoids the repetitive description of similar activities that would follow from a discussion of each village separately. Significant differences, where they appear, will be mentioned, and in this manner, I hope, the identities of the individual villages will not be lost, despite the topical arrangement.

Okinawan agriculture is basically the story of four crops: rice, sweet potatoes, the soy bean, and sugar cane. Rice is a minor crop. Not all farmers grow it, and rice consumption rests both on homegrown products and imports. Individual farmers occasionally grow both to sell and for home use. Today it is less of a luxury than it was before the war because of the imports and the home grown crop. In Okinawa two crops a year are possible.

The sweet potato is the main crop. Cultivation continues throughout the year. Potatoes often are dug on a day to day basis as required for human or animal consumption. At any one time, the patches of sweet potatoes owned by a farmer may represent all stages of growth from a fresh transplanted field to a patch ready for digging. The sweet potato is the cheapest all purpose food, both for human and animal consumption. Okinawans tire of it because poverty enforces such frequent consumption. Since the war, the increased availability of rice for home use, and the opportunities of purchasing rice have relieved this complete dependence on the sweet potato. Among some families, though these are still few, the sweet potato has become the food of animals, with only select ones used at the table. But for the great majority the sweet potato still is the basic article of diet. It is cheap and easy to cultivate either by men or women. Little can be realized from its sale.

Soy beans are grown for home consumption. Making bean curd in the home is universal. Brown sugar is produced as a cash crop. Some is used in the home as a confection both for adults and children.

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262 These crops do not exhaust their agriculture. Wheat and barley are grown, but not in significant quantities. Varieties of beans other than the soybean are important. Pumpkins and gourds of various kinds make valuable food supplements. The onion, the carrot, and the giant horse radish are grown for home use, occasionally for sale. More unusual products, such as the taro, are grown less frequently and then only for side dishes at meals.

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[177] In their agricultural work, farmers prefer the lunar (kyūreki, literally, old calendar) to the western, solar (seireki) calendar. The lunar calendar was abolished for official purposes by the Japanese in 1874. While this change was introduced into Okinawa, the lunar calendar still has vitality in the countryside. The present published calendars show with a large numeral the day in the western count, but in each block, in smaller script, is the corresponding lunar date:

JANUARY	1952
1	
12th Month	5th day

Births, deaths, official correspondence are recorded in the western count. The farmer, however, thinks in terms of the lunar calendar. When he says he plants his sweet potatoes in May, he means May by the lunar count.

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Western Solar and Lunar Day Equivalents

Western	Lunar Count	
	1951, Year of the Hare	1952, Year of the Dragon
Jan 1	Nov 24	Dec 5
Feb 1	Dec 25	Jan 6
Mar 1	Jan 24	Feb 6
Apr 1	Feb 25	Mar 7
May 1	Mar 26	Apr 8
Jun 1	Apr 27	May 9*
Jul 1	May 27	May 10*
Aug 1	Jun 29	Jun 11
Sept 1	Aug 1	Jul 12
Oct 1	Sep 1	Aug 13
Nov 1	Oct 3	Sep 14
Dec 1	Nov 3	Oct 15

* The period from May 24 to June 21, 1952, western calendar, corresponds to the lunar May 1 to May 29. The fifth month is then repeated beginning June 22 and ending July 21, western count. This intercalary month is necessary because the lunar year is about 355 days long. As a consequence about 11 days are lost each year, and an additional month is required every third year.

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132 March through June is the season of greatest rainfall and therefore
731 of greatest flood danger. September and October rain is often light, and it is during this period that there is the greatest likelihood that the sweet potatoes will dry up. During the rainy season, there is flood damage to the rice and dry crop fields, especially if they are in the narrow ravines, or along small stream beds.

132 In Hanashiro, dependence on rainfall is immediate and direct.
312 There is no way of storing water in the mountains by accumulations
241 of snow. Runoff from the hills into the small streams is rapid. Short periods without rain are serious. The planting of the sweet potato is very sensitive to this factor. If one asks a farmer when he plants sweet potatoes, he always qualifies his reply by beginning, "If there is enough rain..."

241 There is in these villages no complex irrigation (kangai). In
312 Hanashiro, the flow of water through rice fields and its division are controlled by simple means. Water comes from the nearby hills, either in rivulets or in slightly wider ditches. In the former case, the water is divided by allowing the owner on one side of the stream to get water one day, diverting it on the next to the other side. The larger streams may be forked.

[133] Streams soon lose their identity as they descend from the hills to the lowlands, where they become the water of the paddy. The streams of Okinawa are hidden in the rice fields.

241 In Matsuda, the flow of water down the hillsides is controlled
311 largely by bench cultivation. Rice paddies go far up the narrow valleys
312 and ravines. When these have been converted to rice fields, the water flows into the highest level. A small aperture on the opposite side allows it to fall into the next lower paddy until the water reaches the level of the valley or lowland, where it may be further dispersed throughout rice fields, or trickle off again as a stream. In this way, the flow of the water, not too fast, not too sluggish, provides continually fresh water with its nutrients from the hillsides for each field, and makes possible the irrigation of large areas.

It is for these reasons that terracing is practiced. Cultivation is easier. So is irrigation. Soil runoff is avoided. Terracing is the only way that a ravine or a small slope can be used for paddies, for which a flat and level piece of land is required. Otherwise, the water necessary for the plant runs off.

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Not all of the upland or slope cultivation is done by terracing, as we have seen. Crops other than rice are often grown on hillsides, or up slopes, less often following the contour of the land. The precautions here are also suited to the cultivation: weeds or grasses grow along boundary lines or divide off sharp drops, or small stone fences may be used.

In Nagamo, where there is no rice grown, there is little water from these sources. It comes from rainfall and amounts of sugar cane and sweet potato that are grown depend on its quantity and regularity. Water regardless of crop is a constant problem. [312]

In Okinawan agriculture, constant fertilization is necessary. There are too many people to leave land fallow in ordinary times. Each plot must be used if the farmer has the time and energy to do so. Since the island is in a humid subtropical climate, the organic materials in the soil (humus) are quickly oxidized. Porous soils encourage the leaching of minerals from the top soil, especially with torrential rains. The fewness of domestic animals increases the dependence on plant residues and artificial fertilizers. One of the commonest complaints of the Okinawan farmer, in addition to the poorness of his soil and crop damage from typhoons, is that it must be unceasingly fertilized. It is a treadmill. He must walk fast to stay in the same place. [134] [231]

There is very little difference in the use of fertilizers in the communities studied. Fertilizers most frequently used are:

(1) Composts. A typical mixture (though there are many combinations) may be composed of dried miscanthus, or any kind of grass, ashes and cinders, perhaps some pieces of charcoal, and goat droppings. This is left a month outside in a pile and put on the fields and hoed under.

(2) Plant residues. These are put on the soil, both of paddy and dry crop land, and hoed under. Plants are the greatest single source of fertilizer. The cut over rice plant is turned under in the paddy field. Tops of the sweet potato, if not used as slips or for food for animals, miscanthus grass, and burned rice hulls are other sources of fertilizer. [824]

(3) Animal manures mixed usually with pen grass. Animal fertilizers are not abundant, an indirect effect of the war which greatly reduced the number of horses, cattle, pigs, goats, and the smaller domestic animals. When available, goat, pig, or horse manures are used. Pig or goat pen grass is gathered up and spread on the fields. Pig manure is the best source of animal fertilizer, for pigs are the most numerous of the larger domestic animals. [727] [232] [231]

(4) Night soil. The use of night soil, called jinpun in Okinawan, has declined from pre-war times. It is often said that it is not used at all. But this statement must be qualified. It is [514]

241 514 occasionally, but by no means universally used. This failure to use night soil may vary from locality to locality, and from farmer to farmer. In my opinion, it has not the importance it has in China and Japan. Neither is night soil used as a food for pigs, though this seems to have been the case in some parts of Okinawa as late as the 1920's.[2] But feeding human faeces to pigs was not observed in any village. 231 514

241 514 Normally in certain parts of Matsuda, night soil is used, though infrequently, in places near the house. It is not carried far. Applications are made to cultivated land and land not presently in use. In the Nagamo area, it is occasionally used on sweet potatoes and sugar cane. Night soil, gathered from the outside toilets, is allowed to dry out before being applied to fields. It is often placed around ornamental plants. The fresh liquid form, carried on the shoulder in two buckets on either end of a long pole, may be applied directly to the fields, ladling out a little of the liquid around each plant. The professional collector of night soil is uncommon in the areas visited. Only one instance was found. Two brothers, who hired themselves out, cleaned the toilets for Yen 130 per day, plus meals. They spread the night soil on the owner's fields. These two brothers served the Gushichan area. [247] [482] [463]

In Hanashiro, night soil is used occasionally, and then, it was said, only by the old. Its main use was on sugar cane. As a general rule, in all the villages, night soil is most frequently used around plants already growing and around each plant individually, rather than mixing it with the soil when the field is being prepared. Its use on rice fields was not observed.

The sparing use of night soil is indicated also by the infrequency with which one meets its characteristic odor in the countryside. An observation of a traveller, almost 100 years ago, lends some credence to the thought that night soil has not been extensively used in Okinawa. "How night-soil is disposed of is not known; certainly it does not obtrude itself on the senses, as it does in China, nor is it applied in the same way."[3] In Hanashiro, the decline in use since the war was ascribed to American influences: the dangers to health, and the increased availability of artificial fertilizers. [114] [177]

241 (5) Commercial fertilizers. These are now substantial proportions of the expenditures of an Okinawan farmer. These fertilizers generally are broadcast over the rice and dry crop lands. The writers of a

2 Richard Goldschmidt, Neu-Japan, as cited, 135.

3 Hawks, Perry's expedition to Japan, as cited, II, 35. The author was Dr. Green.

The writers of a recent report on Okinawan economy have emphasized that the combination of generally poor soils, the rapid decomposition of organic matter in a near tropical climate, and excessive leaching make the problem of fertilization very difficult--4 to say nothing of the trace elements.

(6) Other substances are used for fertilizers. In Matsuda the barber gathers the cuttings from the luxuriant hair of his clients and places them around his sugar cane--and recommends them highly. Acacia leaves are also used for this purpose here. Leaves and miscellaneous plants are often considered to be especially good fertilizers.

Crop rotation (rinsaku) practices differ by district. In the Hanashiro area, the sugar cane, soy bean, and sweet potato (or vegetable), sugar cane rotation is common. Rotation of paddy with another crop does not occur. Rice succeeds rice in the double cropping system here. In Matsuda, a common rotation is either (1) the sweet potato, soy beans (or grain, millet, or green peas) and the sweet potato, or (2) the soy bean, sweet potato, grain (barley or millet) rotation. Here rice is not rotated with other crops. (This however does occur in Okinawa).

Simple Rotations
Hanashiro and Nagamo

One Year

After the sweet potato harvest, the plot is planted in soybeans in the first lunar month.

The soybeans are harvested in the fifth lunar month.

Sweet potatoes follow the soybeans in the sixth lunar month

or

Vegetables alternating with the sweet potato for a year.

Two Years

Sugar cane is sown in the sixth lunar month.

Harvested two years hence, followed by ordinary beans or vegetables, again followed by cane.

4 Agricultural and economic reconstruction in the Ryukyus. A report. Agricultural mission to the Ryukyus, Nov. 1949, 46-47.

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Rotation #2, Matsuis

**First year, ninth month: Autumn planting of sugar cane
Second year, twelfth month: Harvest of sugar cane. Followed by: Soy bean, sweet potato, or vegetables.**

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Land is seldom allowed to lie fallow intentionally for any length of time. At any one time of the year, a farmer may have idle land for which there may be a variety of reasons. He may have other tasks and be unable to cultivate all his land, or have no need of doing so, or some of his land may be so poor that he will not cultivate it unless necessary. Much depends on the individual farmer and his holdings. The village records indicate that in Hanashiro 97.2% of the rice and 83.1% of the dry crop land is under cultivation. From the preceding discussion of land classification, it is clear that many parcels are of marginal quality, and these areas may be left uncultivated, at least part of the year. During the post-war [426] period there has been some informal lending of land, free of rent, to friends and neighbors, if the farmer is not using it himself.

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Manual labor with hand tools is the dominant method of cultivation. Domestic animals are not uncommon, but their use in farming is minor. The war increased the dependence on manual labor through the loss of domestic animals. Only cattle are now used in rice cultivation for plowing and harrowing and this is infrequent. The man or woman and the hoe are far more common. Crops are carried from the [482] fields by human labor. The basket or the straw container, or the [915] tied rice sheaves on either end of a pole over the shoulder, and not [493] horse carts, push carts, or wheel barrows are the main means of transport from field to courtyard. The barefooted farmer, with his hoe and a pole or a basket does the greatest part of the work. The common tools of agriculture are hand tools and adapted to the intensive cultivation which so often has more properly been called the work of a gardener rather than that of a farmer.

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The basic all purpose tool is the solid bladed hoe. The hoe, since deep cuts are possible with its heavy blade, takes the place of the plow. The hoe also replaces the spade, and even the rake, for it can be used to break up and smooth the soil. A poorer farmer may lack [434] many of the tools in the following list, but he will have two or three of the solid bladed hoes.

The accompanying illustration shows the most common agricultural tools:

1. The hera, a spatula or trowel, used for transplanting tops of the sweet potato. Its wooden hand grip curves toward the end of the tool. The hera is also used as a scraper to remove brown sugar from the sides of the cooking pans during the sugar making season.

2. The kama, a small sickle. Next to the hoe, it is the most

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common and indispensable tool. It has many uses, including cutting rice stalks at harvest, brush, and sweet potato tops. 412

3. A small sharp pointed hoe, with a short handle, used in sweet potato planting.

4. A two pronged hoe, the futamata, used mostly with sweet potatoes. The two pronged hoe is used in softer soils. It is much more common in Matsuda than in the southern villages.

5. The three pronged hoe, the mutsumata, also used in sweet potato cultivation and in digging. These prongs, with skilful use, do not cut the potato. It is also much more common in Matsuda than in Hanashiro or Nagamo.

6. The common all purpose hoe (kuwa). It has a thick, solid, wide blade. The handle (about 3 1/2 feet long) is stout. The hoe is much sturdier than the ordinary American garden hoe.

7. Another hoe, longer and with a sharper angle between the handle and the blade. It has a variety of uses.

8. A long handled hoe with a heart shaped blade. It is used for making furrows.

9. An ordinary rake.

10. A cultivator and weeding tool for rice paddies. (The pole in back near the handle of the pitchfork is a prop to hold the tool upright for the picture). Only the more prosperous farmers possess this tool. Rice weeding is done almost entirely by hand. [934]

11. An ordinary pitchfork.

12. The plow (suki) 407

13. The harrow (maguwa), and

14. The waku, a hexagonal wooden frame used in laying out a rice field for transplanting. The last three tools or devices, which are not shown in the picture, will be described under rice cultivation. 413

3

The Annual Work Cycle

The following charts show the annual work cycle by lunar month of two farmers, one in Hanashiro, one in Matsuda. The Western calendar equivalents for 1951-52 are shown below the lunar month. Because the lunar year is shorter, there is a gap, as the period actually covered is from February 6, 1951 to January 26, 1952. These materials are based on observation and conversation with the farmers concerned. 221 241 [805] [114]

Planting dates, types of crops vary slightly from farmer to farmer, even in the same area, depending on individual caprice, the nature of the land, and the types of crops the farmer prefers.

ANNUAL AGRICULTURAL ACTIVITIES
of
TWO REPRESENTATIVE FARMERS OF HANASHIRO AND HATSUDA
By Lunar Month

HANASHIRO	HATSUDA
FIRST MONTH (Feb 6-Mar 7)	
Work begins on 3d day. On 4th and fifth day plant soy beans. Planting may continue next month. Make Sugar. Transplant rice from seeds sown in seed bed in 11th month. Weeding of soy beans.	Work day begins 3d day after New Years. From 4th or 5th until 20-25th prepare soil for soy beans. Sow rice in seed bed. Make sugar in leisure hours.
SECOND MONTH (Mar 8-Apr 5)	
Soy bean planting continues if necessary. Sugar making continues. Planting of sweet potatoes, using slips or tops of plants. Plant cucumbers, Chinese lettuce (hakusai) Sow sugar cane cuttings, slant-wise or part out of the ground. Harvest small patch of Irish potatoes.	Soy bean planting stops about middle of the month. Transplanting of rice from seed bed begins. Weeding and care of soy beans.
THIRD MONTH (Apr 6-May 5)	
In the main, a continuation of second month activities. Planting sweet potato bed. Spring planting of sugar cane continues. Weed rice field by hand.	Plant the sweet potato in seed bed for future slips. Planting season lasts until the 25th. Weed rice fields. Sowing of sugar cane-horizontal plant--about middle of the month.
FOURTH MONTH (May 6-June 4)	
Spring planting of sugar cane continues. Usually finished early part of this month. Continue weeding rice fields. Sow a little dasheen, the satoimo, like taro.	Weeding of rice fields completed about middle of the month. After rain, sow sweet potato, through the 5th month. Sown by slips or transplants. Finishing up weeding of rice plants.

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HANASHIRO	HATSUDA
FIFTH MONTH (June 5-July 3)	
This and succeeding month the busiest of the year. Harvesting and threshing of soy beans. Plant sweet potato slips.	Busiest month continuing through the sixth month. Soy bean harvest. Plots formerly occupied by soy beans put in sweet potato slips which were sown in the 4th month. Heaviest sweet potato planting of the year.
SIXTH MONTH (July 4-Aug 2)	
This and the previous month the busiest time of the year. Continue with soy bean harvest if required. Harvest of red beans, kidney beans (ingenmame). Plant sweet potato slips. Beginning of summer planting of sugar cane which continues until the 8th month. The rice harvest. Rice threshing. Begin digging up the wet and drained fields. Beginning of transplanting preparations.	This and the previous month the busiest time of the year. Sweet potato planting. Rice harvest begins about 10th of the month. Rice threshing with the treadle thresher (dakkoki). Rice land with cropped plants turned under. From 10-20th preoccupation with rice. Replanting of rice seed beds after testing. From 20th to 30th rice planting. Other rice lands fertilized, prepared for transplants. Beginning of transplanting.
SEVENTH MONTH (Aug 3-31)	
Planting of rice in the seed bed. Beginning of transplanting of rice shoots from seed bed (about 20 days for growth). Continues through 8th month.	Transplanting rice continues until the 10th. Plant sugar cane. Plant sugar cane slips if there is rain. Begin weeding rice fields about the 10th.
EIGHTH MONTH (Sep 1-30)	
Plant onions, tomatoes, carrots, lettuce. Plant wheat (komugi), barley (ōmugi), and naked barley (hadaka mugi). Plant sweet potato slips. Continue and complete the rice transplanting. Begin weeding the rice plants.	Rice field weeding continues. Done three times in three weeks until about the 15th. Plant sweet potato slips if sufficient rain.
NINTH MONTH (Oct 1-29)	
Sow horse beans (sora-mame) and barley	If rain, sow sweet potato slips, sow wheat, radishes, tomatoes, leafy vegetables (ha no yasai) and Chinese cabbage (hakusai)

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HANASHIRO	MATSUDA
TENTH MONTH (Oct 30-Nov 28)	
Possible beginning of second rice harvest, though this is early. Planting rice in seed bed. Sow sweet potato slips.	Sow peas (endō-mame) and beans. Plant sweet potato slips if rain. Sow giant radish (daikon), tomatoes, barley. Weeding of radishes, and vegetables planted previous month until the 25th. Rice cutting begins.
ELEVENTH MONTH (Nov 29-Dec 27)	
Continuation of the rice harvest. Threshing and milling. Planting of sugar cane, slantwise. Sow cabbage seed. Rice seed planting begins, or continues if begun in the 10th month.	Rice cutting and harvest. Threshing and milling. Rice fields dug up. Preparation of new fields.
TWELFTH MONTH (Dec 28-Jan 26)	
Sugar making. Sow Irish potatoes (bareisho) but in small quantities	Continue digging up rice fields. Rice sown in seed beds after seed testing. Sugar making may begin.

YEAR ROUND ACTIVITIES

Sweet Potato Planting, Transplanting and Harvesting continues throughout the year, depending on time and distribution of rainfall.

4

Rice Cultivation

Growing rice is a most exacting task. The period from the time the seed bed is prepared until the final milling is one of tedious work and continuous apprehension. The reaction of Okinawan farmers to rice cultivation perhaps was best summed up by a Matsuda farmer who said, "Everyone dislikes the work, but rice is delicious."

Assuming that the field is already in existence, the cultivation of rice may be divided into the following stages: (1) preparation and laying out of the seed bed, (2) selection of the seed, (3) transplanting

of the rest of the syrup. With the stirring finished, the sugar for contemplated home use is spread out in pans to harden. That intended for export is put in specially prepared boxes, furnished by Naha export firms, stencilled and ready for shipment. 249 [434] [415]

In Matsuda, the harvesting of the cane is the same as in Hanashiro. But the old Okinawan and Japanese method of crushing the cane is still used because the destroyed machinery has not been replaced. The cane is crushed outside. Three large steel rollers are placed side by side in a frame, with gear teeth on the top meshing. A sweep about 30 feet long is attached to the center wheel.[6] A horse draws the sweep, revolving the wheels. The cane is fed into the left roller, caught as it comes out, and then fed back into the right roller. The juice is caught below. The residue (kibikasu) is left outside to dry to be used later for firewood. The juices which have been caught are taken in a low lying building with a tile roof, put in a large round pot (marunabe) or a rectangular pan (kikunabe). An open fire place is used for boiling the juice; the fire place is sunk in the ground and lined with stone, with a small opening at the bottom for putting in firewood. This mill is privately owned, the property of an association (kumiai) of about twenty men who rent it out for individual processing. As in Hanashiro, sugar is the production of the individual small farmer from its first planting until its sale for export or for home use. [727] [423] [427]

7

Other Crops

The most important of the other crops commonly grown in the villages remain to be considered. 241

(1) Soy beans (daisu in Japanese, Glycine max Merrill). In all the villages, soy beans were planted once a year, sowing in the first or second month, and harvesting in the fifth month. The field is prepared by making furrows and putting a mixture of chopped up green grasses and some animal manure, or a commercial fertilizer, in the hole in which the seed is planted. The farmer then waits for rain. After rain, he plants the seeds about three feet apart in rows from one shaku five sun (about 18 inches) for very good land to one shaku one sun (about 13 inches) for usual land. The plant is harvested with the small sickle. The beans are threshed by a flail (gurumanbo in Okinawan). The residues are used either for fertilizer or fuel.

6 This device is also relatively unchanged since Perry's time. The only difference is in the wheels which were formerly of wood, geared together by mortise and tenon joints. Stone crushers were also used formerly. In Hanashiro, I saw one of these stone rollers lying in the yard of a villager. For sugar making operations in the 1850's, see Hawks, Perry's expedition to Japan, II, 20, 30.

824 [262] [432] [462] [494] Soy beans have three main uses: soy sauce which is seldom made in the home, bean curd (tōfu) and miso, a bean paste, both always home made. For this reason, soy beans are grown mostly for home use, with the surplus sold. In Hanashiro, where the surpluses are greater, the beans may be sold in Naha, Shuri, or Itoman. Women do the selling, taking the beans to market on the buses, trucks, or three wheeled vehicles.

(2) Other types of beans such as the red dwarf bean (asuki) (Phaseolus angularis Wight), the kidney bean (ingen in Japanese, Phaseolus vulgaris L), the broad or horse bean (soramame in Japanese, Vician fabia L), and peas (endō in Japanese, Pisum sativum L) are grown for home use, usually in parcels which are closest to the house. ● 241 262

(3) The giant radish, (daikon in Japanese, Raphanus sativus L) is, after the soy bean, the most important of the minor crops grown for home use. This is the vegetable most favored either as a condiment, or as a side dish. It is eaten sliced raw, pickled, or fried in strips in soy sauce. When eaten boiled, its flavor resembles that of a turnip. [263] [252]

(5) The pumpkin (Cucurbita pepo L) called nanka or kabocha, the latter name being derived from the word Cambodia from which the pumpkin was introduced into Japan. They are harvested in summer, and one crop a year, generally for home use, is grown. If the flesh becomes too ripe and turns reddish and sweet, it is not relished and the pumpkin is fed to the pigs. [231]

(6) The cucumber (kiuri in Japanese, Cucumus sativus L) is a very minor crop. In none of the villages were they generally grown, and then only for home use.

(7) The hechima or tōgwa in Japanese, subui in Okinawan.[7] This is very large and cylindrical. In exceptional specimens, its outward appearance is indistinguishable from the water melon. Its flesh is white. In the two southern villages, the tōgwa is grown very sparingly. In Katsuda and the surrounding villages, it is more common. Here it is used to fill in during times of food shortage. Some specimens I have seen weighed over 100 pounds. It is planted after lunar New Years, harvested in the 6th or 7th lunar month, a period reaching from about January to May. From April to July, when other vegetables are scarce, it is often used as a substitute. The flesh when boiled is rather tasteless; it is commonly boiled and served with chunks of meat. The tōgwa, in the northern villages, is often stored in dark cool places away from the sunlight, often under the house. If not cut open, the melon can be saved for a year. [184] [221] [252] [251]

7 I am not certain whether this is Luffa cylindrica Roem, Luffa petola, Ser, the Luffa sponge, rag gourd, etc., whose pulp disappears when ripe to be replaced by a web of fibres.

melon can be saved for a year. It is also served raw with vinagar and sugar dressing, often mixed with another vegetable to make a salad called nanasugwa in Okinawan. 24/ 262 [252]

(8) The burdock (gobo) is also very minor and usually grown for home use. It is boiled when eaten.

(9) The carrot (ninjin) is a minor crop.

(10) The trumpet or bottle gourd (yūgao) is only grown in Matsuda and for home use as a summer food. [184]

(11) Spinach (hōrensō), onions (negi), Chinese lettuce (hakusai) are not uncommon. Spinach, lettuce (chisi), and onions do not have the importance either as a crop or a food that they have with us.

(12) The taro (satoimo in Japanese, Colocasia esculenta Schott) can occasionally be seen growing in Hanashiro or Matsuda, often on the edge of a rice field. It is known locally also as taimo and apparently is the same as the Japanese dasheen. The taro is used as a side dish.

(13) The Irish potato (bareisho) is occasionally grown for sale. [432]

(14) Cabbage (tamana) is partly a cash, partly a home use crop. It is also minor. Some Okinawans like cabbage and grow it for their own use, but many dislike it and sell the crop.

(15) The grains are an unimportant part of village agriculture. The most common are barley (ōmugi), wheat (komugi) and millet. (Mugi is a general term for grain. The ō means large, the ko, small, referring to the kernels of the two grains). [193]

Although comparable statistics were not available for each of the villages, the following table from Hanashiro clearly shows the relative importance of the major crops: 24/ 31/

HANASHIRO
Crop Acreages, 1950

Crop	Area in Chō [a]	Percent of Total
Rice	10.89	100.0
Total Dry Crop Land	59.88	100.0
Sweet Potatoes	35.86	59.9
Soy Beans	13.63	22.8
Sugar Cane	5.41	9.0
Beans and Peas (excluding soy)	2.30	3.9
Wheat	1.80	3.0
Millet	0.50	0.8
Vegetables	0.38	0.6

1: Glacken E-5 (1951-1952) 1953 AC7 Okinawa AC7

241 31 [809]

a/ A chō is 3000 tsubo, or about 2.45 acres.

Source: Agricultural Section, Gushichan Village Office, Gushichan-son, Okinawa, September 1951.

In Ginoza-son, statistics for crops on an individual village basis were only obtainable in part. Some Matsuda figures which were available indicate that rice, the sweet potato, and sugar cane were the most important of the crops:

Rice lands 82,151 tsubo (about 27.4 chō)
Summer planting: 58,000
Fall planting: 54,000
112,000 tsubo, including double cropping.

Dry Crop Land 188,305 tsubo (about 62.8 chō)

Sugar Cane:
Summer planting 2170 tsubo
Spring planting 6840 " "
9010 tsubo

The greater part of the remaining dry crop land is believed to be in sweet potatoes.

8

Native Uncultivated Plants of Use to Man
(Other than Forest Trees)

824 In the south, trees such as the banyan (gajimaru), the Japanese redwood (sugi), and the usuki are important within the village as windbreaks. The importance of miscanthus sinensis, often called kaya or susuki, has already been mentioned. Certain plants, used for medicinal purposes, are becoming scarce and are being displaced by modern drugs, but have some interest. Other plants, formerly used in home industries for weaving and making straw sandals, have also declined in importance in the villages.

In the south one of the most interesting associations is that of the Ryukyuan pine (Pinus ryukyuensis), the cycad (sotetsu in Japanese, Cycas revoluta, Thumb.) and Chinese silver grass (miscanthus sinensis). The Ryukyu pine in this area is little more than a shrub. It has some uses for firewood and for minor construction, but the lumber for substantial houses comes from the northern forests.

The cycad, now rather uncommon in this area, has had several uses. The whole plant may be a windbreak or be used for firewood. A form of starch (renpun in Japanese, kuzu in Okinawan) is made from this plant, [262] a food traditionally used in time of great hardship or crop failure.

1: Glacken E-5 (1951-1952) 1953 AC7 Okinawa AC7

Part 1

Hinatogawa, the Fishing Community

1

Introduction

Fishing families are a closely knit group. They are usually interrelated. For the most part, the main houses of their extended families are in the fishing town of Itoman. Fathers, sons, wives, daughters, grandparents participate in some phase of fishing activity. 226 [596] 607

In an agricultural community, the first son remains in the home working the fields of his father. In fishing, through long custom, there is an avoidance of teamwork among close relatives. Members of the immediate family will not go out on the same fishing boat. A father will not take his son, an elder brother will not take a younger. Partners and working teams on boats are more distant relatives or friends. If a father and a son are on the same boat and it is lost, the present and the succeeding head both perish. To this incontrovertible possibility, there has been added the belief that if two persons of the same immediate family go to sea together on the same boat, there will be a disaster. And actual and near disasters are frequent enough to make both points of view understandable. The sons of fishermen, who are learning the ways of the fish and of the sea, go on the boats of others. Many younger fishermen regard the belief that it is inviting disaster to have two members of the same immediate family together on the same boat as a superstition (meishin), but to my knowledge, no fisherman ignores the custom. 226 593 [183]

In Hinatogawa, about one half of the fishermen have fields of their own, usually small and poor. Perhaps twenty men in the village may be classed as half farmers and half fishermen, but even in these cases it is the wives and the children who have the continuing responsibility for the fields. 226 241 [423]

Neither is it rare for a fisherman to be a stonecutter. Perhaps another twenty men are engaged in the summer in fishing, and in stonecutting in the winter, or on unfavorable fishing days. The three main occupations of the village, including Nagamo, are thus found in varying combinations. Fishing is the most exacting and offers few opportunities for amateurs. Stonecutting requires strength and endurance. For those who have land, agriculture offers possibilities of growing one's own food and of avoiding cash outlays. 226 324 463

In an average summer month, there may be about 20 good fishing days. But because of unusual or unexpected rains or typhoons opportunities may be fewer. In 1951, there were only about ten working days in each of the summer months. In winter fishing days average about a week in a 226 96 [132]

1: Glacken E-5 (1951-1952) 1953 AC7 Okinawa AC7

Every three years, the villagers thin out the dwarf bamboo and other grasses in the pine stands along the coast. Late in December or in early January, there is a community planting of pine seeds.

The tools used in forest work are: the hand sickle (kama), a bill or hook knife, the tool so familiar in agriculture; an ordinary long knife resembling a butcher knife or a machete (here called a yamakatana, or "mountain knife"), and a hooked knife on the end of a long handle (sōringama).

Forest care goes well back into Okinawan history and antedates more recent Japanese methods. This care probably was an obligation in the old system of land tenure under which villagers had access to forest lands with the corresponding obligation to replant.

4

An Example of Reclamation

There are cut-over tracts in Matsuda village. The Japanese government, according to local residents, tried to convert these cleared areas into agricultural land. This land reclamation (kaitaku) began about 1935. The land was cleared of its remaining trees and shrubs mainly by firing. (Fire has been used in Okinawa, possibly from early times, in the clearing of land. In 1947 the use of fire in clearing and the hazards in creating forest fires were pointed out by observers who blamed carelessness in firing as the cause of the forest fires in the dry season).[10] Firing was easier and some nutrients from the ash were available to the poor soils.

In Matsuda, the cleared land was hoed and the rocks were removed. It had to be hoed deeply to make cultivation possible. The land was enriched with composts containing horse, pig, and goat manures. The original plan was to promote a more extensive type of agriculture on the reclaimed land because it was poorly adapted to the cultivating methods on the better and more accessible soils. A here-and-there (yadori type) settlement was planned. The houses were to be scattered on hillsides, or in the valleys, to provide sufficient land, admittedly poor, for the settlers to cultivate. The size of the contemplated holdings precluded hand labor of the intensity characteristic of the usual agriculture. The use of draft animals, plows, and harrows was part of the plan.

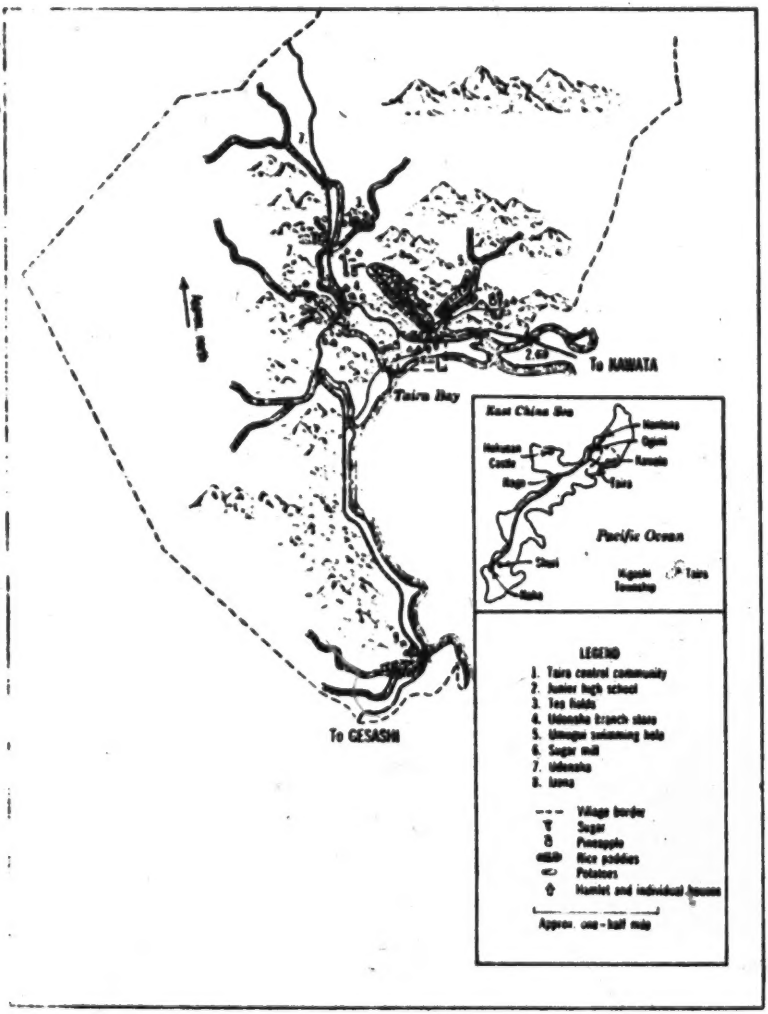
The war and the disappearance of so many of the draft animals prevented its realization. Before the war, it was intended that each family should have a 3000 tsubo tract (2.45 acres). Today the residents on these lands cultivate only about 1000 tsubo, about the limit of manual cultivation considering the soils and the stone that remains. As a consequence, parts of the area are returning to weeds, grasses, and shrubs.

10 Okinawa forests, as cited, 7.

2:Maretzki & Maretzki E-5 (1954-1955) 1963 AC7 Okinawa AC7
Taira

the two main "houses," or family lines in Taira, and for several centuries Taira must have been a small, closely knit community of interrelated people.

Between 1875 and 1895, when the court life at the old capitol of



Map 1. Taira village (Higashi Township).

512 513 is more likely that the majority of adults have to be satisfied with six and a half hours.

* * *

Chapter 3

Basic Economy

INTRODUCTION

241 433 Taira depends on its fields and forests for a living. Rice and the sweet potato are the principle staple crops; wheat, beans, and vegetables are additional subsistence crops. Firewood and building materials, sugar, pineapple, and silk are main sources of cash. Tea is raised for home consumption.

311 [243] [244] Since the few rivers around Taira are short and the valleys narrow, the area available for wet rice cultivation is limited. Farm land for sweet potatoes is also not too abundant in this mountainous region and is located either on the gently sloped hills or on a few plateaus between valleys. Here and there it rises on skillfully terraced steps along the steep sides of mountains.

311 423 241 The size of land holdings and the quality of soil partly determine whether a family is able to grow additional cash crops or merely subsist. The average holding for each family is about 5 acres of rice land and 6 acres of other farming land. Yet it is important to note that the range and quality of this land vary widely. Some families own only [433] 1¼ acres of rice land and an acre of other farm land, while others own as much as 14 acres of rice land and 12 acres of other farm land; good rice paddies produce three times the quantity of poor ones and are wet [511] enough to allow for two crops per year. Of the 141 families questioned, only 15 grew enough rice to be self-sufficient; 123 had to buy extra [433] rice, and only two families raised a surplus for sale. All families grew enough vegetables for home use, and only 18 bought sweet potatoes. Sixty families grew a surplus of vegetables and 16 a surplus of sweet potatoes.

2:Maretzki & Maretzki E-5 (1954-1955) 1963 AC7 Okinawa AC7
Taira

But actually no family is entirely self-sufficient, for each needs to purchase foodstuff as well as ready-made clothes, manufactured mostly in Japan, more substantial building materials, such as better grades of wood, tiles, and cement, tobacco, alcoholic beverages, sweets, toilet articles, some medical supplies, and other luxuries. Farmers buy their tools; students their books and writing materials. Finally, cash is needed to pay taxes.

In addition to the utilization of sugar, pineapple, firewood, and building materials for cash, Tairans also raise pigs for sale to slaughter houses, and some families derive an income from raising silkworms and producing tea. Fishermen sell fish inside and outside the village, and a small group of people are salaried workers or have an income from specialized services.

Village leaders fear dependence on rapidly dwindling forest resources, still the main source of ready cash. They realize that the present modest living conditions of all families could be much improved if Tairans concentrated on increasing the cultivation of subsistence crops and farmed more intensively to raise cash crops. Most people lack this insight, however, and live on a day-to-day basis without much thought of the future. This is an island-wide problem which has the attention of central government agencies, and a great deal of educational propaganda comes to the village through government channels.

AGRICULTURE

The productivity of the land varies not only with its quality but also with the industriousness of the owners. Farmers who show foresight, those who seem to be under less pressure for immediate cash, take off more time from forest work to cultivate fields during planting season. The village headman and council members remind everybody during village meetings and informal discussions that work in the fields should not be neglected. With the approval of the whole community, the first and 15th of each lunar month have been set aside for farming. On these two days it is forbidden to go to the forests to cut wood. Such agreements are usually observed (as a rule), and they help to achieve their purpose but are not completely effective.

Rice is planted and harvested twice a year. The first rice is prepared in January when seeds are put into special beds where they are left to grow into young shoots until March. Until about 30 years ago it was said that all people seeded rice on the same day while prayers were

2:Maretzki & Maretzki E-5 (1954-1955) 1963 AC7 Okinawa AC7
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director with assistants and clerks. The clerks are always young people just out of school who receive nominal wages in return for a seven-day work week. The township office employs as janitor a girl who keeps the office in order, serves tea at any time during the day, washes dishes, and helps to cook meals for entertaining. Her family owns one of the largest houses in the central village and more land than most others. No social stigma is attached to her job; in fact, most Taira girls would consider it a privilege to exchange their mountain work for her kind of employment even though they would earn no more. Another girl, employed by the local "doctor" as nurse and maid, lives with the family, eats with them, and sleeps with their children. Only one farmer employs a hired hand, a man from another township.

Among others living on a salary is the postmaster. His father held the same office, and his son is now trained to succeed him as the third in line. The rice miller, a man from outside the village and married to a Taira woman, and the "doctor" also depend for most of their incomes on specialized services. The latter owns his dispensary and small hospital. He receives some financial support from the township government. His services to people are compensated for either in cash or kind. Patients who are unable to pay at once will bring rice to his house after the harvest. These remunerations, pig raising, and other side activities make him, along with the rice miller and the postmaster, the wealthiest person in Taira. Local male school teachers also own fields, to which they give time in the afternoons and Sundays to help their wives.

The priestess and her assistants, although they are religious specialists, are not paid in money for their services. They participate in daily work like the rest of the village. Only when performing services outside the community is the priestess paid a small fee. Within the village she receives the food and sake which are offered in the ceremony, whether she is called by a family or prays at the village shrine on a general holiday.

DIVISION OF LABOR BY SEX AND AGE

Men and women are equal partners in everyday economic activities, both in agricultural and forest work. Only a few occupations are clearly differentiated by sex: fishing, the handling of horses, and the carrying of night soil are done exclusively by males; housework and the care and feeding of pigs predominantly by women. Some agricultural work is considered too heavy for women, for example, the turning of the

2:Maretzki & Maretzki E-5 (1954-1955) 1963 AC7 Okinawa AC7
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462 heavy sods in the rice paddy; nevertheless, women and younger girls
[241] often do this work along with the men and boys if time runs short. There are some women who prepare their farm land without the help of their husbands.

[313] In mountain work, women produce almost as much as men except
[843] that they do not handle the large logs. Even pregnant women make three or four daily mountain trips, sometimes up until the day of
[482] childbirth. Only the mode of carrying wood, like any load, differs for the sexes: a man uses a carrying stick supported on his shoulder, with two bundles attached to each end; a woman carries bundles on her back, tied and held in place by a tump line tied over her forehead. Women can carry loads of 100 to 120 pounds in this manner.

[312] Men seldom carry water from the tank or faucet to the house; this is considered women's work, although younger boys are expected to
241 help at times. Work in the potato fields is mainly women's respon-
462 sibility. Their hands are also preferred in rice transplanting, where dexterity is needed in pulling out the tender shoots from the seed bed and replanting them in straight rows at measured intervals. Occasionally a young man helps, and boys sometimes try to work along with their sisters when they learn transplanting. Both men and women sow
462 the seed beds. In special activities, such as house building, a more dis-
[342] tinct division of labor can be observed. In any building activity, men do the structural work and women carry materials and cook for the
[653] men. The same division of labor is found on community projects, road building, fencing against wild pigs, or repairing the water pipes. In general, however, no special comment is made if either a man or woman performs work usually done by the opposite sex.

887 Men and women work in the fields and forests from ages 15 to 60.
462 When they approach 60, men like to "retire." If possible, they turn over their responsibilities as household heads to their eldest sons. From
[464] then on, they tend to stay home more and more. They can still help with less demanding work, making bamboo rings for firewood bundles, sawing wood, or doing odd jobs around the house. Approaching old age, most men become economically useless and in other ways contribute little to society. For old women, quite the contrary is true. Even grandmothers who are well over 60 seem strong and active. Most of
[241] them go to the fields to plant or harvest potatoes or other vegetables. One woman, well into her sixties and bent over from arthritis, took long walks to distant potato fields, with a heavy load of slips or potatoes in a basket on her back, a hoe on top of it, supporting herself on a
[855] stick. Other grandmothers look after the youngest children, thus freeing the mother for work. Old women also cook, help bundle firewood,

2:Maretzki & Maretzki E-5 (1954-1955) 1963 AC7 Okinawa AC7
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and look after the sick. Even if they are too old for any work, like two oldsters over 80 years, they can still hold the youngest grandchild. Two exceptional old men, brothers of almost the same age, pass their time by making rope bags and mats from the fiber of the fan palm. Both are active as financial experts, investing money here and there and lending it for high interests in various shrewd transactions.

INFORMAL AND FORMAL COOPERATION

Cooperation plays a prominent part in Taira economy. Assistance is always given for major tasks, such as preparing grass land for farm use or house building, or for work which must be done quickly, such as transplanting rice or harvesting and milling sugar. In fact, since wet rice cultivation depends on assistance in any culture that works its paddies by hand, it is noteworthy that the term *iimarû*, used in Taira for labor exchange in planting and harvesting, is also extended to other mutual assistance. The term, literally translated, means "gathering by rotation." A family who plans a project that needs the help of others makes an informal arrangement with relatives or neighbors to help for one or more days. This is simply done by notifying individuals that such help is needed. No one, unless he has urgent reasons, would refuse to comply with a call for assistance. If it is a small task, a few close relatives are asked. In most larger undertakings, it is the neighborhood group that lends a hand. These mutual-assistance groups usually form within the central village and within each of the geographical clusters of the outlying village, although close relatives from other parts of the community may be called. However, the most recent arrivals in Taira, all present members of one family line who have the same surname, act jointly in reclamation of neglected fields to strengthen their economic position.

Return services are expected, but nobody would admit that there is any thought of equal compensation and would not even joke about the matter. There is a strong feeling that calculated thinking is unseemly not only among relatives but also among unrelated neighbors. One man, when asked what would happen if a person refused to comply to a request for help, answered, "There is no such dirty person, and if there were one, he would be an outcast." During the rice planting season, persons helping in another's fields will shortly be helped themselves. In housebuilding, a long time may pass until those who aided will need aid in return.

Except for people over 56, pregnant women, and mothers of chil-

857 the infant still at the breast who is taken on shopping trips to Nago, the nearest town, or to neighboring townships to visit maternal relatives. When whale meat was marketed from the village on weekends, a school age child was taken along to carry the infant because the mother was burdened with her basket of meat, but this was infrequent. Few children have explored their township beyond Miyagi, a village 5 miles to the east of Taira or Gesashi, 4 miles to the southwest.

[364] Children also rummage through the garbage heaps, where they find useful things like tin cans, bottles, and discarded bits of vegetable with which to play house or store.

857 During the harvest and planting seasons, children accompany adults
241 to the rice paddies and potato fields near the village. Mats are spread out on the dikes and kindergarten children gaily dangle their feet in the oozy mud while "keeping watch over the sleeping infants." Those who whimper to help are given small sheaves of rice to carry to their fathers and older brothers, who thresh them in the dry fields or on the flat grounds bordering the paddies.

855 Many 4-year-olds are adept at handling knives. As implements like
[412] knives, hatchets, pronged hoes, sickles, rakes, and saws were often left within reach of children, it was not unusual for them to use them. Although many cut themselves, adults do not seem to take special care to put them out of reach. Children of kindergarten age are frequently scolded for playing with sharp instruments, but with persistent crying or begging they usually gain reluctant consent.

852 During all holiday events, children participate without much con-
855 trol from adults. Young children are carried by their mothers as they
527 make the visiting rounds or sit on the floor in the building where the whole village congregates. Toddlers explore the surroundings and, finding themselves in the middle of the dance floor, are gently pushed aside and handed back to their mother. Older children hang around while food is served; then they disappear to play games of their own. During sport events, track meets, wrestling, and at dance performances, children are as interested spectators as their parents. Nobody would think of leaving a child at home on a holiday, and nobody would demand that the child sit quietly through lengthy speeches or ceremonies.

868 Children learn dances from kindergarten days on, either by watch-
535 ing or by coaching from an older person, a friend, one's older sister, or mother. Sometimes they are called on to perform for adults, or a
[872] special children's performance is given under the direction of the kindergarten teacher. Adults enjoy these dances as much as if they were done by grownups. They are amused and delighted if a little girl

2:Maretzki & Maretzki E-5 (1954-1955) 1963 AC7 Okinawa AC7
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857 cuddled it in her arms. The 5-year-old in this case was disappointed
854 at being relieved of his charge, but no doubt would have been happy to be absolved of any blame in the event that the baby had fallen and hurt itself.

857 Most 4- and 5-year-olds, therefore, find their nurturant efforts frus-
866 trated, for they are considered too young to carry their younger siblings.
[593] They are told that their necks will hurt, they are not strong enough,
[155] and that they will be dwarfs if they started to carry such a heavy burden from such an early age. A sturdy 5-year-old, nevertheless, finds that if he is persistent enough, his mother will allow him to carry his infant sibling for short periods of time with close supervision. It is on these short jaunts that the child basks in the shower of praise and is richly rewarded for his nurturant behavior. Several mothers reported how their 4- and 5-year-olds take pride periodically in mopping up floors, setting tables, and clearing up after a meal. "They don't really do these chores, they help at it, but we let them do it because they like to. And if they don't feel like doing it, we don't say anything," report these mothers.

857 Frequently kindergarten children accompany their mothers to the
241 potato fields in the afternoons. There they play in and around the
866 plants or "help" their mothers. One 4-year-old girl pointed out with pride that she goes with her mother to their fields to "clean dirt off the potatoes" which her mother has dug before placing them in the basket. Boys of 3 and 5 were observed "assisting" by following adults' instructions to drop the seed potato into the hole at planting time. Generally adults dislike taking children to distant fields, for they beg to be carried near the half-way point. Occasionally a young child who has been on such a trip is toted back in the grandmother's empty carrying basket or in one of the suspended shoulder-yoke baskets of his grandfather.

863 During the kindergarten period, constant pressure is put on the
514 child to learn sphincter control. The child goes pantless until he attains this goal, which is usually achieved by the age of 4. There is little formal bowel training. Children simply crouch and defecate. Grandmothers or mothers clean up the feces as soon as they see them. Younger children eliminate all over the village, but by 3 they usually
[887] restrict themselves to their own yards. When there are grandmothers in the family, bowel training seems to be taken over by them. Not infrequently the old woman can be seen standing over a child in the yard or cleaning up both the child and the yard. She is generally the one who gently coaxes the child to use the outhouse when he is old enough and physically able to straddle the opening over the pit. The

2:Maretzki & Maretzki E-5 (1954-1955) 1963 AC7 Okinawa AC7
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ment. But how should a Taira child grasp, for instance, the meaning of a large hotel in the city, where travelers can stop, engage one or several rooms, have meals served either individually in the room or at the restaurant? The little Taira guesthouse, run by the doctor and to all extent and purposes a private home, is hardly an adequate model.

Learning by doing is, on the whole, an innovation in the school program. To find out what fifth- and sixth-grade students might have learned in the home by actually doing things, the school circulated a questionnaire which covered such items as: "Have you ever tried to make a simple telescope? Did you ever watch a plant grow from the time of seeding and make a scientific description of its progress? Did you ever build a small toolshed or other small structure by yourself? Did you ever make regular observations of weather phenomena and keep a record?" From our previous description of typical activities of Taira children, it is not surprising to learn that very few of these or similar experiences appeared on the answers in the affirmative.

At school, participation and learning by doing are found at least in a few instances. The basic skills of cleaning rooms by using rag and mop, as well as maintaining school grounds by cutting grass with a sickle and weeding with a hoe, may not have high educational value, but they carry over to the home and village situation. In the upper grades, students begin to do some gardening at school. Later in junior high school they work in their own small garden plots on the school grounds and in school rice paddies under teachers' supervision. Unlike the home situation, where learning also takes place by observation and doing, the teacher lays a foundation for solid knowledge by instruction and demonstration of proper techniques and by criticism of errors. The large number of students who work under guidance of a single teacher limits the practical value of such learning situations. It is evident, however, that there is an important qualitative difference between learning in the home situation and at school. Where the child does a chore in the village without trying to meet standards set by parents, the school child finds that the teacher scrutinizes his work carefully, judges, compares, picks and chooses the best performers from the poorer ones, and imposes standards for all to meet or excel. If a standard is set at all in the village, adults tend to either overlook it or simply fail to enforce it.

CHAPTER I: GEOGRAPHY

F. R. Pitts

131 Location Okinawa is a longish island, lying about halfway between Formosa and the southern tip of Kyushu. Together with clusters of islands lying both to the east and west, it forms the political unit known as Okinawa Gunto.

133 Along the axis of Okinawa, which trends from southwest to northeast, there is a fairly simple division into a plateau-and-mountain northern half, a central plateau area, and a low rolling southern knob. The Motobu peninsula juts westward from the northern, or Kunigami, half and forms a distinctive area. Between the Kunigami mountains and the peaks of Motobu lies the ricebowl of Okinawa---the Haneji lowland.

311 Arable Land In general it can be said that the farm population increases as 241 one proceeds south. Map 2, showing the arable land under cultivation as a percentage of the total land area, illustrates this.[1]

Farms in the mountain and plateau north are found in incised V-shaped valleys. Water is plentiful, and rice paddies cover the valley floor. Villages hug the edges of the flat land, and incredibly small sweet-potato terraces rise [137] up the valley's edge. Atop the plateau one finds only silence, and a dense growth of trees and bamboo. Many of the people in the valleys are part-time [132] foresters. The Motobu mountains guard from the frequent typhoons little settlements famed for growing the indigo plant and pineapples. The peninsula's north shore is a fertile but ever-narrowing extension of the Haneji lowland.

In the central plateau area---Nakagami---sweet-potato fields compete with scrubby forest for space on the plateau. Where sufficient water is available, rice fields cover the tiny valley floors and the low-lying coastal fringes. The triangular southern end of the island is known as Shimajiri in [134] popular terminology. Shimajiri is blessed with the greatest concentration of [132] fertile arable land on Okinawa. But the blessing is somewhat reduced by greater exposure to typhoons and a chronic water shortage. Sweet potatoes and sugar cane rank first among crops here.

311 Riceland Okinawans prefer to eat rice rather than sweet potatoes whenever 243 possible. It is a paradox, however, that areas of greatest farm [242] population grow the least rice. The thinly populated north has the greatest amount of riceland. Map 3 charts the distribution of riceland---or flooded fields---on Okinawa. Even in the southern 'son' of Yonagusuku and Kanegusuku flooded fields often contain the mat rush rather than rice. It is a good cash crop, and is sturdier than rice when typhoons roar through the islands.

[128] [1] The figures upon which the maps in this section and the population section are based are found in Appendix A. The figures for Japan and Kagoshima-ken are given for comparative purposes. Of all the prefectures in Japan, Kagoshima most nearly resembles Okinawa in climate and emphasis upon sweet potatoes as a staple food.

Population Density The pattern revealed in a map of population density---Map 4---is approximately the same as that for percentage of arable land. It is somewhat complicated, however, by the urbanization that is going on in Nakagami. A more detailed discussion of the population movements responsible for this situation will be found in a later section of this report. [161]

Farming Almost all of Okinawa's rural people farm, and many are engaged part time in home industries which utilize local products. Particularly noteworthy are the vegetable-producing areas. Kitanakagusuku and Ginowan 'sons' are centers of vegetable production for the American military forces.[1] The inland 'son' of Haebaru grows 53% of the gunto's tōgwā, a wax melon that is a favorite Okinawan food. [433] [241] [262]

One of the most remarkable agricultural areas, Tomigusuku, lies south of the Naha-Mawashi-Oroku urban complex. It grows many kinds of vegetables for the cities, and ranks high in other production. Tomigusuku stands first in the gunto in acreage of green beans, muskmelons, bananas and eggplant. Almost one-fifth of the latter comes from here. It ranks second in tomatoes, and ties with Yonagusuku for second place in weight of mat reeds produced. Miwa, in the far south, leads the gunto in soybean acreage, while Nishihara occupies a similar position in acreage planted to pumpkins.

The most remarkable 'son' in northern Okinawa is Nakijin on the north shore of Motobu peninsula. It leads in gunto acreage of sweet potatoes, leaf tobacco (75.2%), and cucumbers. In animals it leads in numbers of pigs and ducks. It also produces 76% of the banana cloth, or 'bashōfu', of the gunto. This 'son' is mainland Okinawa's chief wheat producer. [231] [235]

The small Okinawan acreage of Irish potatoes is found in Ōgimi-son to the northeast. Yabu is noted for its pickled giant radishes, or 'takuan'. The offshore islands lead in certain special crops. Minami Daitō leads in sugar cane, wheat and barley. Ie Shima seconds in barley, and Izena seconds in wheat. Ie Shima is far ahead in acreage of Irish beans, or 'azuki', accounting for 41% of the gunto's planted acreage of this crop. Though Ie Shima ranks only 15th in soybean acreage, it produces almost a fifth (18.4%) of the gunto's 'miso', in which soybeans are used as a base. 'Miso' making is one of the main home industries on the island. Ie Shima, Kamimotobu and Nakijin retain some of the old 'awa' (German millet) complex, between them accounting for over a third (34.3%) of the acreage of that crop in Okinawa gunto. Kamimotobu is mainland Okinawa's leader in acreage planted to ordinary millet ('kibi'; Panicum miliceum). [252]

Nakagami has little of agricultural distinction. Yomitan leads the mainland in acres of barley and number of rabbits. Gushikawa is second rank in sweet potato acreage, but produces about two-fifths (39.4%) of the gunto's sweet potato starch. It leads in numbers of goats, and is second though not outstanding in numbers of bullocks. [231]

[1] Most of this and following paragraphs derive from Ryūkyū tōkei hōkoku and Okinawa guntō no tembō. Some is based on personal observation and interviewing. [127]

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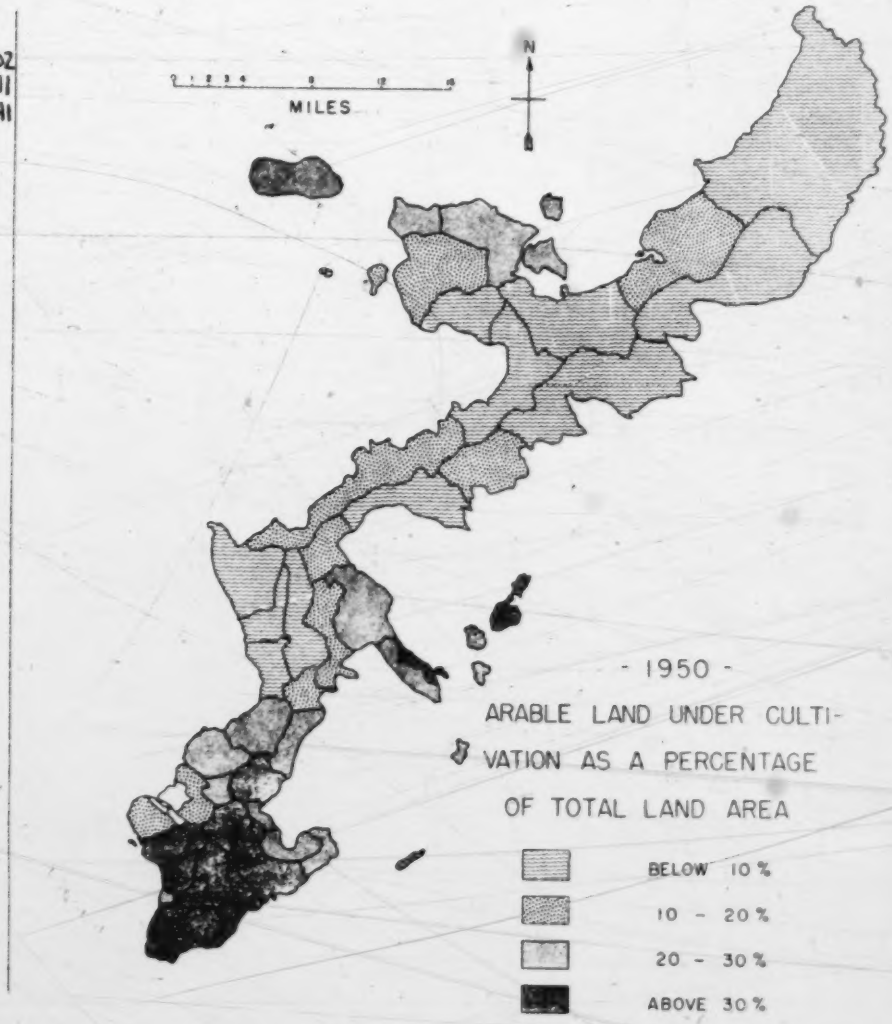

Map 2 1/

(P 2-A)

1/ [See pages 222-224 for data upon which this map was based--Analyst]

CHAPTER III: AGRICULTURAL HISTORY, LAND USE AND DIET

F. R. Pitts

The concept of the unchanging Orient certainly fails to appear true in the case of Okinawa, when the past is examined closely. Indeed, it seems hard to find an area where so much change has been accomplished so fast. The following is designed to show some major aspects of that change, particularly insofar as the farmer is concerned.

1. Agricultural History

The Early Days As early as the 1730's when the great Okinawan statesman, Saion, urged the growing of the sago palm 'sotetsu', farmers were already used to orders and suggestions from the gentry as to modification of their traditional ways. But it was not until the growth of population and the money economy that changes were to be brought about, not so much by orders from above, but chiefly by the workings of economic forces.

The ultimately most effective agent of change had been the introduction of the sugar cane plant in 1623 and its concomitant technique of sugar manufacture.[1] It was not until a decade after the Japanese took over the islands, however, that sugar production began to increase, and not until after the Russo-Japanese war that sugar really became an important crop in the economy. By 1939 the production of sugar amounted to more than a million tons, and production exceeded consumption by ninefold.[2] By the end of the 1951-1952 winter pressing season, production had declined to 256,000 tons.[3]

About the time of Commodore Perry's visit the population of Okinawa had begun to grow, and new areas were settled by both commoners and the gentry. Nanahan dates its existence from this period. Of the first three families to settle here, one came from Shuri gentry, and two others were commoners from the main settlement of Tomoyose. Of the seven settlements of the village of Yamada, three were settled by commoners and one by the gentry. All had come from the urban areas of the south in the latter part of the last century. In Okinawa everyone seems to be aware of his place in history, and in the older settlements one often hears the remark, "...they are newcomers; they have been here for only two hundred years."

In general the agricultural history of Okinawa falls into three periods. The first saw a self-sufficient economy, in which banana cloth was made in the village. The chief crops were millet, arrowroot, and sweet potatoes. With the introduction of a money economy, and its further intensification under the Japanese, sugar gradually turned from its previous use as a home confection to a full money crop. Rice acreage fell as more sugar was planted, and sweet potatoes found a greater place in the diet. The old crops of millet, cassava, and arrowroot were all but abandoned in Shimajiri, and became less important in the north. The third period is essentially the post-war and still continuing one, in which the growing of vegetables for the

1 Navy Handbook, p. 240.

2 CAARI, p. 156.

3 Summation of U. S. Army Military Government Activities in the Ryukyu Islands, July-November 1946, p. 25.

military competes with sugar as a primary cash crop, and cane fields are being converted back to rice paddies as fast as the farmer's resources permit. A more detailed discussion of the crop changes in the last two or three decades follows. 175 241 178 433

Chronology of Change in Crops The major changes in crops revolve chiefly around the replacement of rice as a cash crop by sugar cane, and the later reversal of this situation. About fifty years ago, rice was the chief cash crop. It was rarely consumed in the home, but was sold in order to meet the monetary expenses of taxes, and to buy occasionally the new commodities that were beginning to appear in the markets. Then, not long after the Russo-Japanese war had ended, the price of black sugar jumped almost overnight from ¥8.50 to ¥64 for a 150-'kin' barrel. Everyone wanted to get a share of this boom in sugar, and most began to convert paddy land into 'hatake' for the growing of cane. They were stuck with the 'hatake' when the price fell after two months. The Japanese subsidized sugar later, however, and most of the land that had been converted remained sugar land. [654]

When the people began returning to their farms more than a year after the end of World War II hostilities, there was little market for sugar. The subsidy had gone with defeat, and providentially the sugar lands were available for the growing of more sweet potatoes. American canned food and sweet potatoes were the main items of diet until about 1949. Gradually farmers began to convert 'hatake' to paddy fields, and to grow rice again---this time less for sale than for home consumption. [262] [177]

The old "bearded rice" varieties (fijimē and mēdakōja) of the nineteenth century were replaced gradually by the shorter-statured but higher-yielding 'hōraimai'. The bearded rice, planted only once a year, had a yield of about one-third the present variety, and had only five or six stalks per plant. The twice a year modern variety yields more and has on the average fourteen to fifteen stalks per plant. As a result of the adoption of the two-crop variety, at least one traditional ceremony was abandoned. This was the tentui, in which the whole village participated before simultaneously planting their seedbeds. Before the war, two-thirds of Okinawa's rice requirements were imported.[1] Indicative of the postwar change to rice are the figures for area of paddy-fields in Kochinda-son; the 114,142 'tsubo' of paddy in February of 1948 had increased to 306,220 'tsubo' by September of 1952. Field investigation proved that conversion to paddy has proceeded at least as fast since 1952 as it did prior to that date. 175 241 433 243 178

Before the First World War almost everyone in Nanahan raised forty to fifty 'tsubo' of millet. It was boiled with glutinous rice to make millet rice-cakes, or 'awamochi'. None is raised now. The same is true of cotton. "It grew only a foot high, but its fiber was very strong and would last a lifetime." Some other crops lasted into the post-war period. Until about 1950 textile bananas and yams were raised in Nanahan, but they both proved to be too weak in typhoons, and their cultivation was abandoned. 178 175 241 [252]

1 Summation....July-November 1946, p. 25.

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Many root plants such as the giant radish and carrots used to flower out, and the root would be so stringy that it could not be eaten. About nine years before the war the Japanese brought in many new and better varieties. Nanahan has more vegetables now than the rest of Tomoyose, people say, "...because our houses are scattered and we can get to the vegetable plots easily; they in Tomoyose can't, and therefore pay less attention to vegetables." Of the seven wards of Tomoyose, only Nanahan has an agreement not to keep chickens so that their vegetables will be protected. Before the war the Irish leek and swiss chard were the only abundant vegetables; others were to be had in only small quantities. The "pine mushroom", or 'metsudake', was gathered "when we used to have pines in the neighborhood." Farmers complain that they can grow less green peas now, because of the great increase in number of rats due to loss of the cat population during the invasion.

Okinawa has always been self-sufficient in sweet potatoes except in occasional time of famine. Even then, dried products of the sweet potato are often used. Many varieties are grown the year around, but in Nanahan only five main varieties were mentioned. Okinawa #100 gives the biggest harvest and in fairly fixed amounts regardless of weather. There were many of White #100 before the war, but few now. It was delicious, but the harvest gradually declined from its former high yield. Just after the war there were many of the tumai-kurū variety, but recently few have been planted. The yield had been high, but gradually the seed became bad; it was described as the "most delicious of all sweet potatoes." Yaeyamaakagu was mentioned as a variety still grown in small amounts. The variety which brings the highest market price is Kiirumugwā. This "delicious" potato yields only half that of the average, and hence its price is double.

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Perhaps the best way to view the prewar-postwar change in agriculture is to look at the amounts grown by a typical Nanahan farmer. Table I below presents this information.

Table I

Crop	Tsubo Prewar	Tsubo Postwar	Comments
Sugar cane			Postwar home use amounts to 14-15 'kin' (19-20 lb.) annually. Sells about 100 'kin' (132 lb.). Prewar, sold 1400-1500 'kin' yearly.
(summer planting)	500	350	
(spring planting)	300	150	
Sweet potatoes	700	500	Three harvests per year. Not sold much; make starch only if harvest is plentiful.
Soybeans	300	200	Generally sold about 1/3 of each prewar crop, but only when money was needed at home.
Broad beans	150	70	Prewar variety was a small plant, the postwar one very large.

Table I, Cont'd.

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Crop	Tsubo Prewar	Tsubo Postwar	Comments
Green peas	80	--	None now due to rats.
Giant radish	50	50	Sell half; use the rest in soups.
Burdock root	--	50	Sell 90%; use only at home for feasts.
Carrots	1	5	Sell half the crop.
Dryland taro	--	20	
Irish potatoes	--	50	Winter crop; seed from Hokkaido.
Cucumbers	1-2	50	Prewar, all used at home. Now sell 90% at about ¥10 per 'kin'.
Chives	1	1	Always use in soup. Raise for home use only.
Wax melon	50	50	Sold half in Itoman prewar; now sell same amount in Naha.
Pumpkins	1	1	Entirely for home use then and now.
Kidney beans	100	100	Then and now entirely for home use, in 'gohan' and 'miso'.
Cabbage	--	60	Sell 90% at ¥2-7 per 'kin'.
Eggplant	--	4-5 stalks	For occasional home use.
Green onion	--	10	Entirely for home use, in soups, etc.
Chinese cabbage	--	20	Sell over two-thirds.
Bitter melon	--	5	Mainly for home use.
Mustard cabbage	--	3	Sell half. Pickle temporarily with salt for home use. [251]
Swiss chard	5	50	Pigs eat the old and large leaves; people the young and tender small ones. [231]
Garlic	--	3	It is pickled, and is entirely for home use. [251]
Shallot	--	2	Entirely for home use.
Red peppers	--	1-2 stalks	Used with soybean curd, or when one has a stomach ache. [157]

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Before the war Okinawa imported half its soybean requirements. By early 1951 the prewar acreage had been cut by half.[1] This resulted in the necessity to import soy sauce tax-free from Japan, which brought an ineffective protest from the Legislature early in 1954. 'Miso' paste, which is made of soybeans when they are available, is now made also of corn, broad beans, kidney beans, and various other legumes.

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As early as 1946 the occupation forces reported:

> Rapid restoration of Okinawa's prewar agriculture is hampered chiefly by an arable land shortage induced by military requirements in the southern half of the island, where roughly 30,000 acres are devoted to military use. War damage and migration from combat and, later, base development areas seriously disrupted agrarian economy and early planning was delayed pending disposition of farm tracts affected by military expansion.[2]

That loss of both upland dry fields and paddy land was affected is shown by the following:[3] (figures are in 1,000's of acres)

Table II

Type of Land	1940 Acreage	1950 Acreage	% of 1940
Cultivated land	103.8	67.2	65%
Paddy land	11.5	9.6	83%
Upland fields	92.3	57.6	62%

Even more significant is a comparison of the 1940-1950 figures with those for 1904, which show the situation which existed before any Japanese military installations were built.

Table III[4]

Year	Acres Paddy Land	Acres Dry Fields	Total Arable Acres
1904	15,779.1	93,952.6	109,731.7
1940	11,527.25	82,273.86	93,801.11
1950	9,559.56	57,610.16	67,169.72

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1 Ryukyu Islands Economic Statistics Bulletin, no. 10, January-March, 1951.

2 Summation...op. cit., p. 26.

3 Ryukyu...., p. 13.

4 The 1904 data are from Summary of the Land Adjustment in Okinawa Prefecture, Tokyo, 1904. The 1940 and 1950 figures are from the reverse side of the large map, Okinawa shotō shōzu.

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In all cases, Kunigami seems to have held up the best, and Nakagami has fared the worst. Again this reflects the military interest of both the Japanese and the Americans. The comparison of 1904 acreage with that of 1950 in each of the three areas is shown below:

Table IV

Area	1904 Acreage		1950 Acreage		% Decrease	
	Paddy	Dry	Paddy	Dry	Paddy	Dry
Kunigami	6,530.5	28,398.5	5,463.0	20,773.8	16%	27%
Nakagami	3,861.2	34,176.1	1,675.1	14,932.0	57%	56%
Shimajiri	5,370.3	30,978.7	2,443.9	21,904.4	55%	29%
Okinawa Island[1]	15,719.1	93,952.6	9,589.0	57,610.2	39%	39%

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Chronology of Changes in Farming Technique It is impossible to give for the whole of Okinawa a schedule showing just when each technical innovation was introduced. Some parts of Shimajiri and Nakagami were in advance of the rest of the island; conversely, one finds on the outer islands practices still carried on that the more progressive areas abandoned more than two decades ago.

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In Yamada the transplanting of rice was originally done by scattering (bara'ii) of the shoots. Shortly before 1930 this method was replaced by planting in rows, with a string to mark the distance. The spaces were filled in by planting while walking backwards. About 1950 people started transplanting while moving forward. This has been replaced in part---at least in areas where the mud is firm and clayey---by the planting frame, the 'waku'.

Farmers kept the harvested rice in conical stacks (majin) several feet high. The bundles (tabai) had the heads facing inward to prevent attack by rats. The number of these stacks was indicative of the farmer's prestige in the community. The sheaves were removed from the bottom layer always, and only when rice was needed for food. [554]

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Removal of the grain from the stalk was accomplished by the kūrashijii. This was a pair of bamboo tongs held in the right hand, while the sheaf was drawn through the tongs with the left hand. When the new variety of rice was introduced, use of the kanabā became common. This iron-comb-like device, through which the sheaves were drawn one at a time, can still be found in use on the isle of Sesoko, off the Motobu peninsula. It apparently did not find

[1] The discrepancy in the 1904 totals for Okinawa Island and grand totals for the three division of the island is accounted for by 17.1 acres of paddy land and 256.7 acres of dry fields in Naha, and 142.6 acres of dry fields in Shuri.

It apparently did not find
178 widespread use in Tomoyose, for that village passed almost directly from the use
243 of bamboo tongs to the rotary thresher, or 'dakkokki' (see photo). Yamada first
412 saw this thresher about 1933, but Nanahan farmers began using it only in 1941.
[407]

Hulling of grain was in the past accomplished---as needed for home use
178 or sale---by using a wooden rotary mill (see photos) called fichiūshi in Yamada
252 and shiriūshi in Nanahan. In Yamada two women sat with their feet braced against it, and pulled straw ropes alternately. In Nanahan men did the hulling, and the rotary mill was lower but was three feet in diameter. In the late thirties motor-powered hulling mills were built in many areas, and farmers took their rice there for hulling and polishing.

Polishing of brown rice in Nanahan was accomplished until about 1935 by use of a mortar, or chichiūshi (see photo), and pestle, or ajin. Most families still have these in reserve, as they were used after the war and were replaced by rice mills only after 1949. People in remote areas still use them exclusively. Nowadays people have their rice hulled and polished in one operation at a rice mill, if it is close at hand.

178 Very little wheat was grown in the three farm villages studied, but
246 it was noticed that on the outer isles wheat was more dominant. On Henza isle, removal of the grain from the sheaf and hull was accomplished by rubbing it upon a piece of bump, limestone. On Kudaka, separation was by rubbing on a canvas, both with the hands and feet.

178 After the war farmers took advantage of the spread of the lantana bush,
● 241 which had flourished due to the neglect of the land. It furnished an excellent livestock feed, and also a short pole which they could use in roofing their re-
[342] built houses. Such poles, or kichigwā, had formerly been brought down from the forested north country.

178 Chronology of Change in Livestock Recovery of the land after the war pro-
727 ceeded far more rapidly than replacement
231 of the livestock killed or eaten in the invasion. The following table illustrates the loss and slow recovery (except for swine) in livestock numbers:

Table V

Type of Livestock	1940[1]	1946[2]	1952[3]	1952 as % of 1940
Cattle	22,000	112	6,837	31.0%
Horses	25,000	899	5,110	20.4%
Swine	108,426	1,165	107,077	98.8%
Goats	106,257	1,647	58,472	55.1%

In Kachinda-son the story has been somewhat the same, with the exception that there are many more swine and cattle now than in the thirties. This is due partly to the lesser amount of land in sugar and the planting of more

1, 2 Summation....July-November, 1946, p. 26.

3 Ryūkyū tōkei hōkoku, Vol. 3, No. 3, 1943, p. 1. Valid as of 31 Dec. 1952.

swiss chard for pig feed, as well as the greater availability of lantana bushes for livestock feed. The following table compares the 1931 figures with those for 1952:

Table VI

Livestock Type	1931	1952	1952 as % of 1931
Cattle	41	229	558.0%
Horses	1,676	74	4.4%
Swine	1,774	2,490	140.0%
Goats	4,217	1,400	33.3%

The "great rabbit boom" is often spoken of by farmers in an amusing vein. In the winter of 1946-1947 rabbits assumed the form of currency, and in a mad fever people bought rabbits and sold them, never realizing their true value. A Nanahan farmer related:

> I hitched a ride on a truck, and went up to the Katchin peninsula. There I bought a rabbit for ¥600. I sold it the next day to B. for ¥1200. He resold it for ¥700 profit to a Gisshi farmer who was waiting to buy one. Then I went up again, stayed overnight, and sold the new rabbit for ¥1000 profit. Again and again I went, and finally amassed ¥5000 in profits. With these rabbit profits I bought what I thought was a pregnant goat for ¥7000. It wasn't pregnant, and I had to sell it for ¥3000, taking a loss. But then I bought a pig from B. for ¥2500 and sold it to 'One-armed K' for ¥3000.
>
> In Tsukazan, which was the center of the rabbit trade in this area, a man sold all of his land to invest in rabbits, but he lost everything on the deal.

2. Land Use

The basic pattern of land use has been described in Glacken's Okinawan Village Studies (SIRI Report No. 4), and in Nuttonson, Ecological Crop Geography and Field Practices of the Ryukyu Islands, Natural Vegetation of the Ryukyus, and Agro-Climatic Analogues in the Northern Hemisphere. Although agriculture is not quite as intensive nor yields so high as in Japan, still much inter-cropping, double-cropped and rotation of crops is carried on. Because sugar cane takes a year or more to mature, various crops such as kidney beans, giant radish, cucumbers, broad beans, soy beans and mustard cabbage are interplanted with the cane. They mature and are harvested before the cane grows too tall and cuts off the sunlight. Sugar cane is rotated in a two-crop cycle of cane and sweet potatoes; or it is rotated with soybeans and sweet potato in a three-crop cycle. Very rarely is cane replanted in a field which has just produced a crop. In this way the farmers hope to diminish the damage done by worms and insects.

241 311 312 [137] [132] Yields Per Acre Because Okinawa is a sub-tropical country, crops can be grown the year around. Hence the low productivity of a land subject to natural disaster such as drought and typhoons is somewhat compensated for. In the limestone areas of Shimajiri ground water is scarce except after fairly heavy rains. Nanahan has nine small ponds, or kumui, where people wash clothes and sweet potatoes and in which grows the water convolvulus, or unchēbā. Farmers say that if a drought lasts three months, crops do not yield at all. All remember the great drought of 1895 (Meiji 28-nen) when no rain fell for seven or eight months. Even wells dug in river bottoms dried up. The 23 households of Nanahan at present have eight small wells and one large community well which was dug in 1948. Little ditches on the hillsides lead rainwater to the rice paddies, and are fixed so that the water can be directed into wells. If a paddy field is near the farmer's house, a drainage ditch is dug to it for the disposal of used household water which is considered to contribute to a field's fertility. Tables VII and VIII show the yield of crops in Okinawan and American terms.

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Table VII

Crop	Yield per tan[1]	Bushels per acre[2]
Summer rice	1.10 koku	41.1 bushels brown rice
Winter rice	1.16 koku	43.3 bushels brown rice
Upland rice	.72 koku	26.9 bushels brown rice
Common barley	.51 koku	10.4 bushels
Wheat	.59 koku	12.1 bushels
Naked barley	.52 koku	10.6 bushels
Millet	.38 koku	7.85 bushels
Common European millet	.40 koku	8.17 bushels
Soybeans	.70 koku	14.3 bushels
Green peas	.55 koku	11.3 bushels
Broad beans	.71 koku	14.6 bushels
Kidney beans	.71 koku	14.6 bushels
Peanuts	.83 koku	17.2 bushels

Table VIII

Crop	Yield per tan	Tons per acre
Sweet potatoes	1,762 kin	47.6
Irish potatoes	2,176	58.8
Cabbage	3,540	96.1
Other leafy vegetables	1,669	45.1
Giant radish	2,677	72.2
Carrots	2,439	65.85
Pumpkins	2,090	56.5

[1] Ryūkyū tōkei hōkoku, Vol. 3, No. 3, p. 1, 1953 (data for Okinawa Guntō).

[2] Converted according to standard indices, as given in SCAP, Natural Resources Section, Report No. 143, Tokyo, 1951.

Table VIII, cont'd.

Crop	Yield per tan	Tons per acre
Cucumbers	1,570	42.4
Wax Melon	1,859	50.2
Tomatoes	2,789	75.5
Watermelons	1,557	42.0
'I' rush ('Bingo-i')	1,411	38.1
'I' sedge ('Shichitō-i')	1,716	46.3
Tea	197	5.32
Mandarin orange ('mikan')	1,183	31.95
Edible banana	1,629	44.0
Green manure crops	2,994	87.5
Sugar cane (cane weight)[1]	9,000	243.0

Use of Grass, Trees and Brush Southern Okinawa looks barren to the American observer---few trees break the skyline and great fields of long grass cover the hillsides. The comment heard most often is, "Why don't the Okinawans plow up the grass and plant crops, instead of letting all that land go to waste?" The only proper and truthful answer to this query, of course, is that the grass is utilized to the full and that none "goes to waste".

The "ubiquitous miscanthus" referred to by Glacken actually comprises many grasses, chief among which are 'susuku', 'kaya', and one known by the Okinawan name nāichū. 'Susuki' is used mainly for the making of brooms, which occurs in December after the flowering of this grass has turned the countryside from deep green to a cloudy whiteness. 'Kaya' is used mainly for the thatching of roofs, but is also fed to livestock. Among other plants of the wild land, or 'genya', are the 'mogusa' or fūchibā, used for moxibustion and as a vegetable in soups; the hirahāgusa, used to cure leech bites; and the warabinufūnii, or edible bracken fern.

The Japanese butter-bur is found in the 'genya', and is utilized as a tobacco substitute in hard times, and occasionally as food. The flowering ginger, or sannin, furnishes leaves for wrapping rice cakes, and fiber for the tying of bundles of sugar cane. The leaf of the inedible potato or m-bashi (Japanese, 'kuwazu-imo') was used by very poor people before the war as a wrapper for 'miso' paste, which they peddled throughout the countryside. The plant is still used to stop the bleeding of wounds. The lantana---known in Hawaii as "haole-koa"---furnished poles for house roofs, leaves for fodder, and beans for tea during famines. Numerous other grasses and herbs are used by the older generation for medicinal purposes, as can be seen by perusal of Tawada's excellent book, Okinawa Yakuyō Shokubutsu Yakkō, 2nd edition, Naha, 1951.

Almost all trees, which in Shimajiri means essentially those surrounding the houses, are used in some way above and beyond their major function as windbreaks in time of typhoons. The leaves of the yūna tree are a native

[1] This information is from the Kochinda-son Office.

The leaves of the yūna tree are a native
311 substitute for toilet paper, and are still used in some villages, though people
824 deny that the practice continues. When pressed they may intimate that so-and-
[54] so, "the poor family over the hill", retains the practice. Banyan trees fur-
[178] nish leaves for green manure, as do many other varieties. Before the war many
people grew kuroki for eventual use in the making of samisens. The top of the
[534] tree was cut when young so that it would become stubby and thick. The neigh-
boring village of Tsukazan boasts of a samisen-maker whose fame has taken him
to Naha. The 'kusunoki' tree is considered to be the best tree to plant near
the house, for it discourages termites.

● 241 Fertilizers Okinawan farmers in most areas utilize the traditional night soil
and green manures, as well as the modern synthetic fertilizers.
[514] Almost every house has two toilets. The one not in use is utilized as a
[237] night-soil decay pit. Pig manure is mixed with the human excreta, water added,
and the whole let set for about a fortnight before use on the fields. Use of
animal manure in the paddies was abandoned with the introduction of the new
variety of rice. Animal manure produced good heads on the old variety but makes
heavy stalks only on the new.

241 Green manure is extensively used as a plant nutrient in the paddy
824 fields. Indeed, some paddies in winter are devoted to the raising of green
manure, which is plowed under before spring planting. Outer leaves of cabbage
are fed to goats to become manure for the dry fields, or the leaves are
trampled into the mud of the paddy to decay. Thistles, 'kuwazu-imo' leaves,
and tree leaves of the yūna and banyan are only a few of the many types of
green manure. Compost, or 'taihi', is made for the dry fields and some paddies
by mixing animal manure with 'genya' grasses, rice straw, and other plant re-
mains. Before the war, compost was not used for vegetables, because it would
cause a shortage in the amount available for the cane fields. Nowadays com-
post is more available, and many vegetables assume huge proportions. One
Nanahan farmer produced a wax melon weighting 97 'kin', or 128 pounds.

241 Commercial fertilizers available to the farmers include ammonium sul-
phate ('ryusan ammoniya', 'ryūan'), synthesized fertilizer ('kasei hiryo'),
ammonium nitrate ('ryusan kari'), nitrogen-lime ('sekkai chisso'), urea
('nyōso'), potassium chloride ('enkakari'), and superphosphate of lime ('Kar-
insan sekkai'). Ammonium sulphate is preferred for sugar cane. During the
last four or five years the Agricultural Federation ('Nōren') in Naha has en-
forced a tie-in sale so that when a farmer buys two sacks of ammonium sul-
phate, he must also buy one sack of superphosphate of lime. Farmers in
Tomoyose quite often dispose of the latter by dumping it beside the road, as
they believe that it is not good for the soil found on their farms. One
enterprising Nanahan farmer, who for several years was a member of the
Kochinda-son agricultural committee, enquires about the cast-off fertilizer,
and when he finds it he uses it to good effect. When he was interviewed con-
cerning this, he expressed anger at what he considered the backwardness of
his neighbors.

[177] Okinawans were first introduced to chemical fertilizer in the mid-
twenties, when a black fertilizer appeared. This was later replaced by the
various white products, which since some time before the war have been supple-
mented by soybean waste when available.

4. A Comparison of Land Tenure in Two Rural Villages: Kanegusuku and Kitazato

621 Kanegusuku [34] The village of Kanegusuku is located in the southwestern corner of Kanegusuku-son approximately three miles due south of Naha on the west coast, and it is immediately north of the town of Itoman. As is typical of the old Okinawan villages it is situated on high ground with all of its houses facing in a southerly direction. Aside from a detached cluster of eleven houses, the village houses are close together in [121] a contiguous settlement. The village was selected for study because of its infrequent contact with Americans, relative lack of war damage, and a reputed antiquity and conservatism. As of December, 1953, the population was 507 persons forming 108 families occupying 103 houses. The present population is said to be about the same as before the war despite a 20% loss of life during the battle; this loss has been made up by repatriates from overseas and immigrants from other areas of Okinawa. The repatriates and some of the immigrants either had formerly resided in the village or regarded it as their ancestral home. There are nine families who were native to some other part of Okinawa before the war and have no previous connections with the village. The majority of the families have been in this village for [592] many generations. There are approximately five persons in each household, which usually consists of a nuclear family, husband and wife and their children; but the composition of a number of households has been changed due to wartime losses.

Socially the village is segmented into eight lineages which con- [613] stitute 92% of the total population; the remaining 8% is made up of unrelated families new to the village since the end of the war. One lineage includes nearly 61% of the village in its membership. Each of these lineages [582] is related to lineages in other villages. Approximately 66% of the village marriages have been within the village, and nearly 50% of the marriages have been between persons of the same kin group. Thus, the composition of the village is fairly homogeneous, and both the community and the kin groups are strong cohesive units.

621 463 241 Occupation 98 of the 103 houses are engaged full time in farming; the household heads of the five remaining houses are employed outside the village in non-agricultural pursuits although all participate in some part-time farming. In addition to these five there were approximately fifteen young men, not household heads, who also worked outside. Most of these commuted daily to the greater Naha area where they were engaged in military employment or construction work. For the majority of villagers farming was the sole occupation.

621 311 [434] [136] Arable Land Over 66% of the total area of this village is under cultivation, and about 38% of the cultivated land is in irrigated fields. The chief sources of income derive from rice and mats made from a sedge which is grown in an irrigated field. In terms of the average amount of arable land per household Kanegusuku is somewhat better off than the average for Okinawa: 1514.2 'tsubo' for Kanegusuku as compared with 1037.6 'tsubo' for Okinawa.

[Kanegusuku]

Non-cultivated land, however, is equally important to the average farm household in providing fuel, thatching, green manure, and many other necessities. 621 [311]

Land Holdings A breakdown of the 103 houses of Kanegusuku shows that 97 own land; 6 houses own no land of any type. Of the 103 houses, 56 rent land, and 6 of these rent all the land which they use. The remaining 50 own some land and rent some land. The figures are somewhat misleading, as included among the renters are those who rent only house lots; also included are some houses which have more than enough land for their own needs, but have rented plots contiguous to their main plots and in turn rent out their inaccessible plots to others. 621 423 427

In terms of total land per household 60% possess one or more acres of land which includes house lots, grass land, and forest in addition to cultivated fields. Nearly 73% of the village houses possess three-quarters of an acre or more of land which might arbitrarily be taken as the minimum necessary for mere existence, since farmers say that from 1000 to 2000 'tsubo' (1224 'tsubo' equal one acre) are needed for the average family. This leaves 27% of the village or exactly 28 houses with insufficient land for their needs. An investigation revealed that 13 of these 28 "have-not" houses were new to the village since the war. This group includes former residents of other Okinawan communities as well as repatriate families, of which 4 can be classed as having insufficient land. Three of these 28 houses without sufficient land were headed by widows, and two of these significantly were women who were not residents of the village, so that they were without close relatives in the village to help them. One person, the sole occupant of his house, was mentally unfit to take care of his lands and was helped by relatives. The remaining 11 of these 28 houses were headed by persons who were old residents of the village, but of these 9 were houses headed by younger sons who had established independent branch houses since the end of the war. Thus, out of a total of 28 landless and virtually landless houses, only two were headed by first sons who were native to the village. Although this group constitutes but 27% of the houses, it rents 51% of all the land rented by villagers. 621 423 [327]

Fields There are on the average 11 plots of land per household in Kanegusuku; of these 6 are cultivated fields while the remainder are in grass land, house lot, and forest or wood land. The average rice field is a little over a quarter of an acre in size, whereas the average dry field is about one-sixth of an acre in size. [311] [241]

Owners The land records list 160 landowners in Kanegusuku; 146 of these now reside in the village and 14 are listed as absent. Since there are but 103 houses in the village, a number of houses have more than one landowner. This is in part a result of the war, which broke up a number of families by deaths and also caused a severe housing shortage; consequently, there is some doubling up in a number of houses. Another factor is that in the land-rich houses (comparatively speaking) a father often has set aside some land for his younger sons and has entered this land in their names even though they are still quite young. [342]

[Kanegusuku]

621 The group most dissatisfied with its lot today are the repatriates
423 from the former Japanese possessions. A few of these families were able upon
727 return to take up the lands left by relatives killed in the war or were given land by prosperous relatives, and four repatriate families are virtually landless. All of them, regardless of the size of their present holdings, chafe at their circumstances. One repatriate told the author that he had farmed nearly twenty-five acres in a single plot of sugar on Saipan and that he could never be satisfied with Kanegusuku after this. He is hoping that he will eventually be permitted to return to Saipan.

Before the war that segment of the village which possessed the least amount of land consisted almost exclusively of younger sons who had established branch families. Today this group has been augmented by repatriates from the former Japanese possessions and by emigrants from other Okinawan communities.

621 Farm Laborers During the course of the author's stay in Kanegusuku
241 there was only one full-time farm laborer in the village. This man came from
[463] one of the southern islands in the Ryukyus and was employed for less than a month. After his discharge, the former employer remarked that no outsider has enough interest in the lands of another family to make his employment worthwhile. Transplanting and harvesting rice place the heaviest labor de-
[857] mands upon the family; at these times virtually every member of the family
[476] works in the fields; even the grade-school children are given minor tasks, and the family labor force is supplemented by close relatives or neighbors in a reciprocal labor exchange.

829 Attitudes toward the Land One does not hear or see evidence of
554 any great love or attachment for the soil on the part of the Okinawan farmer.
463 In fact, quite the contrary seems true. Most regard their occupation as a
241 lowly one and feel that they are farmers because they know no other occupation. Land is of value because it provides a livelihood, nothing more, though some exception might be made for house land. Nearly all of the younger generation reflect the thinking of their fathers, and they are eager to get a good education (the diligence of even the average Okinawan student would strike the American teacher as amazing), secure a job in the
[833] town or city, and leave the drudgery of the farm village forever. Most farms are so small that they provide no more than mere subsistence for their cultivators; consequently, the young men see no sense in attending agricultural school when they will have little more than an acre to work. One young man from a fairly prosperous family in the village recently secured a job as a stevedore in Naha, and both he and his wife expressed their pleasure over what they regard as a definite improvement in their status. Though they have not sold the land which they own, they hope that it will never be necessary to return and farm it.

[178] To a large extent this attitude toward the land and farming as an occupation is directly related to the economic and cultural changes taking place on Okinawa today; the city is an exciting place to live in and employment there is economically more advantageous than farming. Nevertheless, this seems in part the product of the old land system and the low, serf-like status accorded farmers under it. Some of the earlier visitors and officials

[Kanegusuku]
[Kitazato]

on Okinawa observed that the farmer took little interest in the care of land which he did not regard as his own. The author was particularly impressed by the contrast between Japan and Okinawa in regard to the care of land, for the meticulous care which the Japanese farmer lavishes on his land seems absent by contrast among the Okinawan farmers.

Kitazato The farm village of Kitazato in Kami Motobu-son presents a marked contrast to Kanegusuku in that it has suffered the loss of a major part of its area to a military installation. In studying the village of Kitazato the village of Kanegusuku was used as a base line for comparisons. To supplement his own observations the author has drawn heavily on actual statements by Kitazato people; in this way he hopes to present as accurately as possible the actual state of the village compared to villages elsewhere on Okinawa, and the villagers' own conceptualization of their circumstances.

Kitazato is not an old village, having been founded but seven generations ago by the younger sons of gentry families from the Naha-Shuri area. It was politically independent of the neighboring villages during the time of the old kingdom, but after the annexation it was administered in part by the villages of Gushiken and Jahana. In 1936 or 1937 it was established as an independent village, taking its present name.

Following their release from civilian internment camps the villagers returned to the site of their old homes shortly before New Year's of 1946. They found virtually their entire village land area converted into an airfield and accompanying military installations. According to their account there was considerable misunderstanding between them and the military as to where they might live, and they feel that they were subject to contradictory and inconsistent orders. Several moves were made which disrupted their plans to settle, and one villager stated, "I grew tired of rebuilding my house." In 19[illegible] they were finally ordered to remove themselves from the military area, and they took up residence in their present location. It is claimed that there was insufficient land in the area to resettle the entire village on a single site; so, the village divided into three sections. Thirty houses were located on the beach between the villages of Gushiken and Shinzato, and this segment was given the name Hama. The remainder of the houses settled in the nearby hills from one to two miles away. Thirty-nine houses settled in the hills between the villages of Furushima and Jahana, taking the name Kijikina. Ten houses located themselves in the hills just north of Kijikina in a settlement which they called Anahana. These latter two, however, function as a single settlement for administrative purposes. These 80 houses making up the scattered village of Kitazato have a total population of 414. Despite their physical separation these segments have striven with considerable difficulty to maintain their political and social unity; one mayor and council serves them, and people are constantly visiting from one area to another. Today most of their land is gone, and they are too far removed from any city, town, or military installation (the airfield is abandoned) for employment. Extreme poverty and bitterness are one's first impressions of the village.

[Kitazato]

somewhat appalled by what they regard as a lack of concern on the part of Americans for their plight. As they have been long accustomed to a paternalistic government, this seems to be a deliberately negligent attitude, and they express this feeling not infrequently. The following statements were heard by the author, "We never see any Americans who come to inspect or look at things" and "No Americans ever come to see how we are." 621 829

National Organizations National organizations such as the youth association and the women's association are rather weak in Kitazato when compared with Kanegusuku. They say that they have little spare time for such organizations, which is undoubtedly true, and the scattered nature of the village makes meeting a chore for some in the outlying sections. The ranks of the youth association are thinned by the loss of members who have sought employment in the city or military camps. Even the agricultural association is not as active as elsewhere, since the farmers feel that little can be done to improve their situation. The farmers and the head of the 'son' agricultural office were disgusted by the stupidity of a plan tendered by the central agricultural office to relieve the distress of Kitazato and other dispossessed farmers in Kami Motobu-son. This plan called for the planting of sugar cane as a cash crop and the use of the proceeds to buy food. It failed to take into consideration that sugar takes a long time to mature and that the people would have nothing to eat in the interim, and even if they were to plant their entire holdings in sugar, it would not bring enough cash to feed them. 621 595 621 829 242 241

Village Solidarity Village solidarity seems very high in Kitazato, much higher than in Kanegusuku. Undoubtedly this is largely due to the common problem which faces them all; nevertheless several other factors appear to be involved. The gentry origin of Kitazato kept it aloof from its immediate neighbors for many years, and apparently no real contacts were established in neighboring villages until after the annexation. Even today the people of this village speak a dialect markedly distinct from that of their nearest neighbors; thus, the upper-class origin and the physical and linguistic isolation of the village has perhaps contributed much to its integration and solidarity. The relative weakness of kin groupings seems to be another factor. In Kanegusuku one gets the impression that the strength of the lineages mitigates against informal village-wide cooperation and only through formal organizations such as the youth association is any real village-wide cooperation realized. In Kitazato the weak kin groupings seem no obstacle to this. 621 186 [197]

It seemed to the author that the people of Kitazato never tired of reiterating how well they cooperated together and how much they enjoyed working together as a village. "We want to stay together as a village, as we cooperate so well together." This is typical of the statements which were made. Many say that they would not object to emigration provided they might emigrate as a village.

Land Rentals Two serious problems face the people of Kitazato in regard to renting the land of neighboring villages. They are unable to pay 621 427

and women. Two informants who had lived in Japan denied having ever heard of public baths with mixed bathing. Okinawans have occasionally been shocked by seeing Americans nude. Okinawans feel that not only should the lower part of the torso be covered for the sake of modesty but the upper part also should be covered, if one is out of doors, for reasons of health; the sun's rays are harmful if too strong. Modesty may even reach proportions uncommon in the West; one young man told Lebra that he does not enjoy going swimming because he believes he is too hairy. The same young man told how he and other boys, when in high school, used to peep through a crack in the bathhouse wall in order to see the women bathing on the other side, until they were chased away by the proprietor. This hardly suggests the casual attitude toward nudity reported for the Japanese. 291 834 [515] [826]

Body Ornamentation. The Okinawans seem never to have practiced any sort of body mutilation---such as the Chinese foot-binding. However, women were tattooed on the wrists and backs of the hands until early in this century. Most women over 50 have tattooed hands. There are several stories told that purport to explain the origin of the practice---that it was to prevent Okinawan women from being kidnapped, for example---but these stories are of doubtful value. The designs have names but evidently no meaning; one old woman said that they varied with the tattoo artist, who put on whatever he wanted. Tattooing was done before puberty and marriage. It may have originally been part of a puberty rite. 178 304

Many people of both sexes between the ages of 20 and 40 have elaborate gold and silver work on their teeth. In many cases the work does not consist of fillings or bridges but of thin caps put over sound teeth for purely ornamental reasons. These can be removed without harming the teeth. People are said to be having this sort of work done today, but in time the value Americans and present-day Japanese put on "natural-looking" teeth may win out over the urge to ornament the mouth. Of course there is also a great deal genuine dental work done because of tooth decay. 301 [772]

At present American values and modern Japanese values in feminine beauty are being spread by the beauty parlor. For several years the permanent wave has been popular though perhaps not well suited to Mongoloid hair. And recently a number of young women are said to have added padded brassieres to their equipment. 177 832 [305] [302] [241]

Elimination. Urination and defecation are regarded differently. Urination in public is permissible for males, if they turn away. I have seen a dignified old gentleman talking over his shoulder to a young woman while he urinated into the ditch. Women may also urinate in public, though they do so less frequently. Defecation in public is not usual; even children are scolded for it though they may occasionally do it. Feces ought to go in the proper place; one reason for using the toilet may be that the "night-soil" is used as fertilizer. 514 [863] [241]

The Okinawan term kusu is used rather more freely than its Japanese cognate, though the uses are parallel. Alone it means "feces", human or animal. It is the usual word for animal manure. In compounds it may mean 192

178 The new roads and buses have done much to break down the isolation
361 of the village; the physical barriers separating village from town have greatly diminished. This has enabled the rural dweller to enter the labor markets of the urban areas and to expand greatly the markets for his products.

178 Communications Equally as impressive as the changes in transpor-
20 tation have been those in communications. Today newspapers, radios, tele-
178 phones, and movies are making their influences felt in the country. Prior to the war there were five motion-picture theaters on Okinawa; today there
546 are fifty-seven, and approximately one-third of the films shown are of
[177] Western origin. Though the theaters are concentrated in the towns and cities, the young people of neighboring farm villages often make regular use of them. Some of the young people in Kanegusuku go to the theaters in Itoman several times a week.

178 Everyone asserts that newspapers are becoming more common in the
204 rural areas. In the isolated village of Oku at the northern end of Okinawa the mayor informed us that nearly 90% of the houses subscribe regularly to a newspaper.

178 In Kanegusuku seventy of its 103 houses obtained radios this year
207 under the group listening system. A number of those who were unable to
203 secure radios (due to a lack of equipment) are hoping to do so in the near future. In some villages the group listening system has been utilized as a public address system for official announcements. This has greatly simplified the problem of conveying information or orders to the villagers. Pitts made use of this system on Henza Shima to explain his purpose in studying there. In this same village the regular Shuri broadcasts are sometimes replaced with Okinawan music played on a phonograph owned by the village. On Izena Shima the system is used to announce the arrivals and departures of the two ferryboats which serve the island.

The radio has been eagerly received in all communities which the author visited and has been instrumental in bringing the villagers into contact with the outside world.

177 Agriculture and the Rural Economy Major changes in Okinawan agricul-
178 ture have been slight. Improvements have been made in yields as the result
241 of scientific research conducted by the Japanese, a few new minor crops have been introduced, modern fertilizers have been made available, and the system of land tenure was radically altered by the Japanese; but the basic agricultural methods have remained the same. The major crops have not changed though their ratios have fluctuated, and most importantly, farm holdings remain as scattered and heavily fragmented as ever. There is at present no trend or even a suggestion of a trend toward consolidation of holdings nor is there any indication of a lessening of land pressure. So long as the farms remain small, fragmented, and widely scattered, there will be no possibility of using machinery or scientific methods. The present system of intensive gardening does produce a high yield per acre, but it also demands a large labor supply.

Statistics show (see chapter on Agricultural History) that since the termination of the communal land holding system in 1903, there has been a steady decrease in the amount of land cultivated on Okinawa. That this has continued unabated at the same time that the population has rapidly increased seems a paradox. Most certainly improvements in crop yields through research development have not been sufficient to offset this. Nor has the tax burden been excessive or crushing; in fact, quite the contrary is true since the Japanese substantially reduced land taxes when they abolished the communal system. What is more, the shortage of food has for many years necessitated importation of a considerable portion of the food consumed, and in view of the limited job opportunities in pre-war Okinawa, it seems unlikely that this means of livelihood would be overlooked. It would seem that the major reasons for this decline are cultural and historical. 178 241 [311]

It will be recalled that the farmer in the Okinawan kingdom lived in a state of serfdom; class differences were in effect those of caste. When freed from the restrictions by the Japanese, many were likely eager to depart from the farm village. The status of the farmer traditionally has been quite low on Okinawa. People dislike farming, and those who do farm state quite frankly that they are farmers only because they know nothing else, being poorly educated or possessed of little ability. No young men were heard to express a desire to become farmers, and no father wishes this occupation for his son. Pitts and the author noted in studying the household registries for their respective villages that not infrequently the first son has left the farm to seek employment elsewhere, quite contrary to usual Japanese practice. Farming is not a goal for the Okinawan youth today, and at the University of the Ryukyus the quotas for admission to agricultural studies were barely filled in 1954 whereas some of the other departments had three and four times as many applicants as openings. Centuries of a communal land ownership system left the farmer with no feeling of attachment toward his soil such as exists among the Chinese peasantry. Land was frequently reapportioned, and no plots were retained long enough by a given cultivator to give him a feeling of proprietorship. It is said that few ever tried to improve their holdings, as they felt these would soon be allotted to another. 198 241 554 [566]

The nature of taxation under the communal land system together with slowly rising population also made necessary a greater exploitation of land resources than is necessary today. The old tax rate was fixed and was set at a ratio of 40%. If the government had set 100 koku per year as the expected yield for a given village, then the government demanded 40 koku from that village each year. This may perhaps have been satisfactory to the villagers at the time of assessment, but as the population slowly rose there were more mouths to feed out of the villagers' 60 koku portion, and there was no respite from the tax demands in time of crop failure. Consequently, there was increasing pressure to bring more and more land under cultivation; undoubtedly, inferior, low-yield, idle soils were made into farm land. After the peasant was freed from this system and the trend toward sugar production began, foods were imported from outside, and the slow contraction of arable land figures began. 178 241 651 311

The average Japanese farm of 2 1/2 acres and the average Chinese farm of over 4 acres contrast strongly with the Okinawan average (and most are 241 433

241 433 average, since the range is narrow) of approximately one acre.[1] Even by the most skillful and intensive gardening methods there are limits to what can be extracted from the best of soils. One might say that the average Okinawan farmer is engaged in sub-subsistence farming. With the traditionally low 241 554 status accorded a farmer and the minute size of his holdings it is hardly any wonder that the Okinawan does not like farming and is eager to accept whatever is available elsewhere.

198 241 311 729 Land loss to military installations has accelerated a process which has been operative for fifty years. In this case, however, the effect has been concentrated in certain areas and not distributed over the island at large; consequently, there has been considerable hardship in these localities. But the main point of bitterness where it has been so engendered is over the loss of livelihood rather than over the loss of the land per se. The point, they feel, is that not only have they lost their lands but that they also are not receiving adequate compensation for this loss. It would not be an exaggeration to state that most perhaps would prefer to be landlords, under reasonable terms, to the military than farm the land if it were available again.

198 433 Okinawan food production has passed through three phases in the last fifty to sixty years. During the first phase prior to the land reform of 1899-1903 there was a self-sufficiency of food in the rural areas. After the reform, the Japanese subsidized sugar and did much to encourage its production, which rose to a point 900% above local consumption. This led to a sharp decline in acreage planted in other foods, particularly grains---rice, wheat, millet. Since 1943 there has been a shift toward increasing food production[2], and sugar has dropped to about one-tenth its prewar level. In some villages such as Kanegusuku where mat weaving was formerly of considerable importance the irrigated fields formerly planted in sedge have been replanted with rice. Despite the increasing emphasis on food production it is unlikely that the village will ever return to self-sufficiency, for in recent years new tastes have altered the diet and created a dependence on foods not produced within the village.

198 361 Settlement Patterns The reconstruction of villages after the war often did not follow the prewar pattern. Suttles states that prewar Yamada was a scattered settlement made up of several small hamlets, whereas the new postwar settlement is a nucleated one. The new site is at an important crossroads, while the heart of the old village is virtually empty. North of Yamada on the highway to Nago one can see where the new road has departed from the old one; in several cases the villagers have moved closer to the new road despite the fact that it was much dustier there.

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1 Cressey, George B., Asia's Lands and Peoples, New York, 1944, p. 84, p. 191.

2 Several informants stated that the word went out to the farmers in that year to concentrate all efforts on food production. Undoubtedly this was linked to the turn of events in the war for the Japanese.

CHAPTER XII: OKINAWAN-AMERICAN RELATIONS

[Yamada]

[21] In this chapter we shall describe the effects of the occupation and types of relationships that have developed between Americans and Okinawans in a rural setting. We shall discuss the problems of Okinawan military employment. And we shall discuss the nature of Okinawan attitudes toward the United States, toward Japan, and toward themselves as a separate ethnic unit.

1. The Rural Setting: Yamada

W. P. Suttles

[62] Changes in Structure and Orientation [361] [241] The village of Yamada lies in southern Onna-son on the China Sea shore of Okinawa just south of the Ishikawa isthmus. The village is actually composed of several settlements that form a single 'ku' (the administrative unit) in a single 'aza' (the land unit). The topography of the 'aza' is rather uneven. The great majority of the people are farmers. They raise a little tea on one of the higher hills, sweet potatoes and other root crops and a little wheat on their upland fields, and a considerable amount of rice in paddies at the bottoms of their narrow valleys.

Before the war Aza Yamada consisted of seven settlements. Two were the old villages of Yamada and Kuraha. Four were yaarui (J. 'yadori'), smaller, separate settlements established by settlers (chijuunin, J. 'kiryūmin') who had left the urban areas of the south in the latter part of the last century. Of these four, three, the mee ("front") and kushi ("rear") yaarui of Tirabaru and the yaarui of Uema were settled by commoners (hyakusoo, J. 'heimin'); the fourth and most isolated, Tirabaru, was settled by gentry (yukatchu, J. 'shizoku'). The seventh settlement, Ajimaa, was a recent clustering of houses and shops around the crossroads and school.

For purposes of administration the aza was divided into 'han'. Since administration meant mainly the communication of instructions from above, number of houses and distance were probably the principal factors in determining the size of the 'han'. Thus the three larger settlements, Yamada, Kuraha, and Ajimaa, were each a 'han'; two of the yaarui that were close together, the mee and kushi yaarui of Tirabaru, formed a single 'han'; but the remaining two yaarui, Uema and Tarigaa, were separate 'han', probably because they were too far apart for one 'hanchō' to transmit information to both.

But for purposes of cooperation in certain economic and social activities, a unit larger than the single yaarui was evidently needed. This unit was the chinju (J. 'kinjo', meaning "neighborhood"). The three larger settlements were each a chinju, besides being each a 'han'. The two yaarui that formed a single 'han' also formed a single chinju. But the two yaarui that formed separate 'han' also formed a single chinju, their distance apart apparently being of less importance than the need for a larger cooperative unit.

621 464 Only five of these are household heads entitled to vote in village elections or assume village office, but because their jobs keep them out of the community much of the time, they are not given village offices. There is some feeling on the part of the villagers that they are out of touch with the affairs of a farming village; consequently, their influence in the village thus far has not been too great.

621 727 464 Jagaru and Tobaru The villages of Jagaru and Tobaru in Chatan-son offer a marked contrast to Kanegusuku in terms of the importance of military employment to the community. These two contiguous communities are hemmed in on all sides by military installations. They constitute little more than housing areas within a township that has lost, according to its officials, approximately 91% of its land to military installations.

[241] [718] Formerly nearly all of the families were engaged in farming as a full-time occupation; today less than one-sixth are farming and not all of these are able to depend on it for their sole support. Military employment has replaced farming as the chief occupation of these villages. In October of 1953 there were 2,352 persons out of a total population of 10,411 who were employed in military jobs. In addition there were a number of business establishments which were dependent on the trade of military personnel.

621 464 [934] The welfare of Jagaru and Tobaru is wholly dependent on military employment. In the fall of 1953 there were rumors of an anticipated cut of 10% in the over-all Okinawan labor force employed by the military. This would have made over two hundred individuals and their families without any source of income or means of livelihood. The people were much upset by this prospect as every family had at least one member employed in military jobs and were wholly or in part dependent on their income.

In contrast to Kanegusuku those who were engaged in military employment in these villages played an active role in community affairs. A great many of them are household heads, and they are not regarded as being out of touch with village affairs since the chief occupation of the villagers is military employment. While the Kanegusuku people regard securing a military job as good fortune, the people here regard it as a necessity. According to township officials most of this year's graduating class will look for jobs in the nearby installations.

621 464 829

The villagers are bitter because they feel that the military has not paid them adequate rentals for the use of their land. There is also some resentment over the conduct of troops in these communities during their off-duty hours. In short, though the villages are completely dependent on the military for their livelihood, they are bitter and resentful in their attitude toward it. The possibility of job losses seems likely to heighten this feeling.

621 727 464 Henza Shima The island of Henza off the east central coast of Okinawa differs from the above communities in that a large segment of its population is engaged in military employment and yet the village itself is far removed from any military installation. This village suffered but slight damage and no loss of life during the war. After the war over four hundred repatriates returned to the village, bringing its population up to approximately 4,900.

APPENDIX "A"

128 This appendix contains figures upon which Maps 2 through 7 were based. List A is for Map 2, List B for Map 3, and so forth. The figures for Japan and Kagoshima are derived from the Japan Statistical Yearbook, 1950. All other figures are based on data in Ryūkyū tōkei hokoku.

311 List A Arable land under cultivation as a percentage of total land area.
241 The 31 December 1950 figures are used for area of arable land. Figures for total land area are for 31 December 1952. However, the calculation is valid as of the former date because the areas of political units did not change in the two years. The amount of arable land in Naha is negligible; the area for Tokashiki was not available in 'chō'.

311 List B Flooded fields (riceland) as a percentage of total arable land under
243 cultivation, 1950. The figures for Japan and Kagoshima are valid as of 1 August 1947. No acreage of riceland was reported from Ie Shima, Naha, Aguni, Minami Daitō or Kita Daitō.

161 List C Population density per square kilometer. The data for Japan and Kagoshima are valid as of 1 August 1948. The data for Okinawa Guntō are valid as of 31 December 1952.

List D Number of persons per acre of arable land under cultivation, 1950. Data for Japan and Kagoshima are valid as of 1 August 1948. The census of persons in Okinawa Guntō was taken on 1 December 1950. The data on acreage of arable land under cultivation were reported 31 December 1950. Inasmuch as December is not a month when new land is reclaimed, the map and figures may be considered valid as of 1 December 1950. No figure is given for Naha because the acreage of arable land is negligible. No figure is given for Minami Daitō because of the great acreage planted to sugar cane. About 9,400 'tan' of the 11,000 'tan' of arable land there is in this crop.

List E Percentage of increase in population, 1940-1950. Data for Japan and Kagoshima are not available for those years. Data for Okinawa Guntō are valid as of 1 October 1940 and 1 December 1950. A minus sign (-) denotes a net decrease. At the time of the 1940 census, some political units were not separate, but were included in towns or cities nearby; therefore the 1950 figure of necessity includes both areas as one.

List F Percentage of increase in population, 1950-1952. Data for Japan and Kagoshima are not available for those years. Data for Okinawa Guntō are valid as of 1 December 1950 and 31 December 1952. The total percentage of increase in the 25 months was 5.55%---these percentages are reported on page 76 of Civil Affairs Activities in the Ryukyu Islands. On the map any area with an increase of less than 5.55% and a decrease of less than 5% was considered an area of moderate emigration. Any area where the decrease exceeded 5% was considered as an area of excessive emigration. An area with more than 5.55% increase but less than 10% increase during that period was considered an area of moderate immigration. Areas in which the increase exceeded 10% are considered as having urban characteristics.

Political Unit	List A	List B	List C	List D	List E	List F
Japan	32.8	55.4	217.7	6.30	----	----
Kagoshima	19.2	37.5	225.5	5.14	----	----
Okinawa Guntō	15.7	16.7	424.6	[illegible]0	22.8	8.9
Kunigami	3.1	36.7	57.1	[illegible]8	20	-7.0
Ogimi	10.3	25.8	139	.72	15	-3.8
Higashi	5.9	33.8	487.6	8.27	11	-5.5
Haneji	9.7	52.0	172.7	8.76	43	-2.0
Yagaji	24.9	26.9	745.2	9.35		-20.5
Nakijin	21.6	13.7	382.2	8.58	29	3.0
Kamimotobu	28.4	4.2	579.7	10.20	35	-1.0
Motobu	12.1	11.3	442.6	17.27		-5.8
Yabu	9.8	29.4	258.6	10.77	45	-3.2
Nago	7.7	46.0	371.2	19.38		15.0
Onna	10.0	32.2	143.9	6.79	33	-2.1
Kushi	4.2	47.2	55.6	7.72	36	-7.8
Ginoza	10.9	25.3	170.1	7.88	56	-11.7
Kin	9.5	35.0	175.1	8.21		-7.0
Ie	24.0	----	281.9	5.84	-4	3.5
Iheya	16.4	39.2	127.2	4.88	47	6.2
Izena	36.1	40.8	505.9	4.63	9	3.7
Ishikawa	15.7	37.3	977.0	26.90	115	4.9
Misato	13.6	14.5	686.0	23.68		1.6
Tonagusuku	35.1	7.3	699.4	14.12	55	7.1
Katsuren	27.5	5.6	848.4	15.32	44	5.2
Gushikawa	21.9	10.6	983.2	21.40	99	-1.2
Goeku	3.7	16.0	861.7	89.50	128	13.3
Yomitan	7.3	3.9	473.6	29.00	4	5.4
Kadena	4.2	.4	562.3	46.75	11	19.2
Chatan	.1	11.8	853.8	267.20		2.5
Kitanakagusuku	16.0	8.8	700.5	19.43	6	2.1
Nakagusuku	20.1	4.1	631.2	14.60		3.5
Ginowan	21.9	9.3	926.0	17.92	24	5.8
Nishihara	42.2	1.2	457.1	5.73	-21	10.2
Urasoe	24.0	12.0	705.2	12.32	8	4.0

Political Unit	List A	List B	List C	List D	List E	List F
Shuri	23.9	.2	9393.9	59.1	14	9.5
Naha	----	----	10447.5	----	-33	14.4
Mawashi	13.0	2.1	3605.6	71.5	83	15.8
Oroku	11.1	2.0	1157.4	45.8	33	6.6
Tomigusuku	41.7	9.7	490.4	6.36	1	-6.0
Itoman	25.3	16.0	8927.5	231.5	116	10.2
Kanegusuku	47.8	9.4	574.6	5.72	12	0.8
Miwa	36.6	1.8	347.8	4.60	-13	7.1
Takamine	30.2	8.1	389.4	5.84	- 8	2.5
Kochinda	40.4	8.9	566.2	6.28	- 6	2.4
Gushichan	38.3	15.5	480.0	5.90	- 5	0.4
Tamagusuku	32.0	23.1	561.2	8.25	27	-2.2
Chinen	29.3	14.2	589.3	10.20	28	1.6
Sashiki	24.2	16.5	728.8	14.97	33	-3.2
Yonabaru	20.0	.5	1541.5	34.9		16.3
Ōzato	38.0	11.5	544.1	6.60	- 5	
Haebaru	56.3	4.0	693.9	5.57	-16	3.2
Nakazato	17.3	39.0	213.1	6.31	24	-1.4
Gushikawa	27.2	23.6	264.9	5.38	20	1.6
Tokashiki	----	22.0	51.4	7.39	11	-10.9
Zamami	8.4	18.7	99.6	6.74	-13	- 3.5
Aguni	34.0	----	320.2	4.52	- 1	11.5
Tonaki	27.1	1.3	264.5	7.39	64	- 1.0
Minami Daitō	36.5	----	67.3	----	-54	15.4
Kita Daitō	26.4	----	39.4	1.21		-14.0